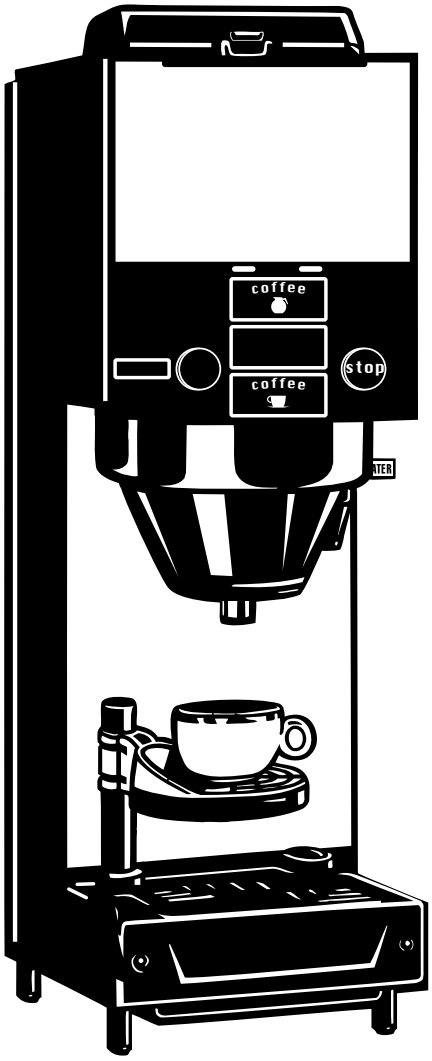
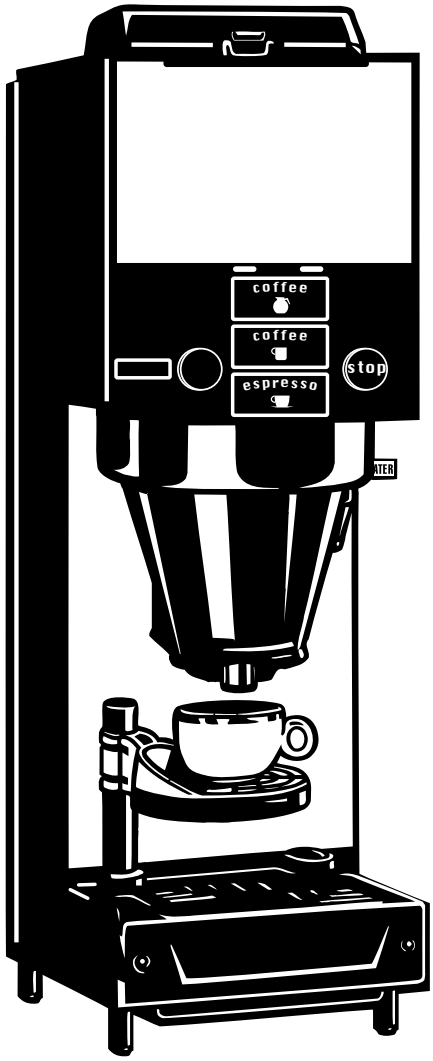
DOUWE EGBERTS

Cafitesse 100

SERVICE MANUAL



Cafitesse 110



Cafitesse 120

© 2004 Douwe Egberts Coffee Systems International, Utrecht, The Netherlands
35260400 July 2004

Copyright © All Rights Reserved. This manual may not be translated or copied or reproduced in any form or by any means in whole or in part without the prior written consent of Douwe Egberts Coffee Systems, Utrecht, the Netherlands.

This manual is intended for internal use only.

Douwe Egberts Coffee Systems issues no explanation or guarantees with regard to the contents of this publication and expressly disclaims all responsibility for any implied guarantees. Douwe Egberts Coffee Systems reserves the right to revise and change the contents of this manual without notice.

Published by Douwe Egberts Coffee Systems, Utrecht, the Netherlands
July 2004

© 2004 Douwe Egberts Coffee Systems International, Utrecht, the Netherlands

- **This Service Manual includes all Service Information sheets until SI CFT 100/139.**

Preface / Safety Instructions 1

Installation / Putting into Operation 2

Faults 3

Programming 4

Functions 5

Water System A

Brewing System B

Dosing System C

Product Delivery D

Cooling System F

Housing G

Power Supply and Control System K

External Options L

Payment Systems P

Preventive Maintenance 6

Service Procedures 7

Service Information 8

Modification Instructions 9

Spare Parts List 10

© 2004 Douwe Egberts Coffee Systems International, Utrecht, The Netherlands

Table of Contents

Preface and Safety Instructions ***1***

Preface/ How to use the manual ***1.1***

General 1.1.1

Structure of the Manual 1.1.2

Definition of Options and Accessories 1.1.3

Safety Instructions ***1.2***

1 Preface and Safety Instructions

1.1 Preface/ How to use the Manual

1.1.1 General

- This service manual is intended for trained service technicians within the D.E.C.S. organisation who have attended the product training courses for this dispenser.
- This service manual is not a study book containing technical details about this dispenser, but it can be considered and used as a reference book.

1.1.2 Structure of the Manual

- **Chapter**
  The service manual is divided into 10 sections numbered from 1 to 10.

- **Subsections**
  Sections can be divided into subsections. Section 5 is therefore divided into 9 subsections, each describing a special function of the dispenser.
  The description of the subsections (A, B, etc.) matches the subsections used in the Service Informations System (**SIS**) within the D.E.C.S group .

- **Paragraph**
  Each subsection has the same paragraph build up.

  The water system serves as an example and it can be found under:

Section	**5 Functions**
Subsection	***A Water system***
Paragraph	1 Adjustments - *This paragraph describes all possible adjustments for this subsection, regarding timing, calibration etc.*
	2 (Dis)assemblies - *This paragraph describes in detail, how to assemble, disassemble or exchange a particular component.*
	3 Functional descriptions - *This paragraph describes in detail how a particular component of the dispenser works and how the different parts in this system interact.*
	4 Electrical diagrams - *This paragraph describes the electrical input and ouput of the water system.*
	5 Technical specifications - *This paragraph explains technical specifications of the water system.*
	6 Options - *Available options, especially for the water system.*
	7 Accessories - *Accessories for the water system.*

- When the dispenser was subject to changes, consecutively numbered Service Information sheets will inform you on these changes. These are then to be filed as chapter 8 in the Service Manual.

- Changes that must be carried out for each dispenser available on the market will be announced by Modification Instructions. These are then to be filed as chapter 9 in the Service Manual. After the modifications have been carried out, the corresponding number must be marked with a cross on the Modification Record Sticker.

General information:

- This manual is only valid for dispensers with the Facelift Design or which have been adapted accordingly.

- The concept of this manual has been structured in order to be applicable for several dispenser types. If a dispenser is not equipped with a certain component, the corresponding section is listed, but will be blank. The complete numbering has not been changed. Some paragraphs e.g. the one on 'External Options' can be completed by the service technician according to requirements and country specifications.

1.1.3 Definition of Options and Accessories

- Accessories and options are also described in this Service Manual:

Definition	Description	
Options	Various options for the dispenser result in different versions, types or models of dispensers. Example of options: - Mixing unit	Functions within the dispenser functions (Chapter A.6)
Accessories	Additional components for the dispenser to allow other functions or another appearance. - Photographs frontside - Photographs backside - Drainage kit - Side module	Functions within the dispenser functions (Chapter A.6)
External Options	Arrangements that are not integrated into the dispenser. They have a separate function regarding the dispenser. Examples: - Cooling device - Water filter - Water decalcifier	Information can be found in subsection L.

1.2 Safety Instructions

- This subsection is intended as an overview of the warnings and instructions used in this manual, that must always be observed.
- The following general safety precautions apply to the operation and maintenance of the dispenser, and must always be observed. Non-observance of these instructions or any other safety precautions mentioned in this manual could impair the dispenser's safety standards.

Hazard intensity levels

- There are three different levels of hazard intensity, identified by signal words – DANGER, WARNING and CAUTION. The level of hazard is determined by the following definitions:

DANGER	-	Sudden hazards, that WILL lead to either serious personal injury or death
WARNING	-	Hazards due to dangerous behavior that CAN lead to either serious injury or death.
CAUTION	-	Hazards due to dangerous behavior that can lead to either minor injury to persons or damage to product.

- The dispenser must be placed on a table or a counter. The dispenser can be used to deliver hot beverages, such as coffee, espresso, decaffeinated coffee or tea (depending on the dispenser model). The dispenser can be converted to deliver cold beverages, such as café cool. The present dispenser can only be used for liquid beverage concentrate in one-way flexi-packs. The manufacturer can not be held responsible for dispensers, that were used for purposes other than those specified in this manual.
- The instructions in this manual must always be followed. Non-observance can lead to dangerous situations, and the manufacturer cannot be held responsible for possible damages.
- Service technicians must have read the Service Manual and operating instructions thoroughly, and understood both, before they can install the dispenser and put it into operation. The service technician must hand over and explain the operating instructions to the customer.
- Installation/programming and repair of the dispenser must be performed by trained service technicians only.

DANGER: **Never insert the power supply plug of the dispenser into a wet or damp socket. The plug itself must not be wet or damp either. Also never insert or remove the plug from the socket with wet hands.**

DANGER: **The beverages delivered by the dispenser are hot! To prevent scalding, hands (and/or other parts of the body) must be kept away from the outlet area while beverages are being prepared and dispensed.**

Keep children away from the dispenser.

DANGER: **Safety devices must not be bridged or put out of action.**

DANGER: **The dispenser and the service device are equipped with a lithium battery.**

There is a danger of an explosion due to mishandling. The battery may not be recharged, disassembled, short-circuited, burnt or subject to temperatures above 100 °C or water. Replace it only by a battery of the same type. Spent batteries must be disposed of properly.

WARNING: **The dispenser must be connected to the drinking water supply and to the electric power supply in accordance with the local regulations.**

Check the drinking water quality.

WARNING: **The dispenser must be connected to an electric circuit which is secured by an extra fuse.**
We recommend the connection to a supply with an integrated fault current safety switch or to install a fault current safety switch. The connection must be made using a safety plug socket earthed according to regulations.

Observe the local regulations!

WARNING: **If the dispenser is not used for a longer period of time (e.g. at night or during the weekend), close the water tap. Set the ON/OFF button to OFF.**

The power supply may not be interrupted completely, because otherwise the cooling system will not function any more.

WARNING: **If the dispenser is equipped with a heating plate, do not touch the heating plate. Danger of being burnt.**

WARNING: **The dispenser must be cleaned regularly for hygiene reasons and to guarantee perfect operation. Take care of sharp edges when cleaning the dispenser. Danger of scratches or cuts!**

WARNING: **For repair of the dispenser use only original spare parts; otherwise the manufacturer will accept no liability in the event of damage.**

WARNING: **Only connect the dispenser to the drinking water supply and electric power supply in accordance with all official regulations and local conditions.**
Check if the current supply matches the instructions of the rating plate.

WARNING: **The dispenser is suitable for indoor use only.**

CAUTION: **The dispenser must not be used when the water supply is interrupted because the boiler will not be refilled.**

CAUTION: **Do not switch off the dispenser between beverage deliveries in order to keep the optimum water temperature in the boiler.**

CAUTION: **Only put heat-resistant glass pots on the heating plate.**

CAUTION: **Clean the inside and outside of the dispenser by using a damp cloth and do not splash it. To clean the dispenser, only use cleaning agents approved by the food industry.**
Never use high-pressure sprays for cleaning.

CAUTION: **The use of the special Cafitesse cleaning agent is recommended. Do not pour any water or cleaning agent into the cooling compartment.**

Table of Contents

Installation / Putting into Operation ***2***

Transport/Handling ***2.1***

Installation Requirements ***2.2***
Tools 2.2.1
Water Supply 2.2.2
Electric Power Supply 2.2.3
Space Requirements 2.2.4
External Options 2.2.5

Unpacking ***2.3***
Unpacking the Dispenser 2.3.1
List of all Items that are supplied with the Dispenser 2.3.2
Disposal of Packaging and Dispenser
at the End of their Service Life 2.3.3

Installation / Putting into Operation ***2.4***

Checklist: Instructions for the Customer ***2.5***

Transfer of the Dispenser to the Customer
(incl. HACCP = Hazard and Critical Control Points) ***2.6***

Technical Data (Total Overview) ***2.7***

2 Installation / Putting into Operation

2.1 Transport / Handling

- Dimensions of the dispenser incl. packaging:

Height	:	690 mm	(27.17 in)
Depth	:	535 mm	(21.06 in)
Width	:	275 mm	(10.83 in)
Weight	:	21 kg	(46.3 lbs) (empty)

Transport in general

CAUTION:
- **Transport the dispenser carefully.**
- **Do not throw the dispenser or handle it incorrectly.**
- **Do not transport several unfastened dispensers on top of each other.**
- **Only transport the dispenser in upright position.**
- **When storing the dispenser, ensure that it is only stored indoors and take precautions against parasites.**
- **Protect the dispenser from the influence of unusual odours.**

Transport due to location change

When transporting single dispensers, use the handles supplied in the package.

When transporting a used dispenser to a new location:

- Switch the main switch off and disconnect the power supply plug.
- Disconnect the dispenser from the water supply.
- Remove the flexi-pack.
- Unhinge the floater wire over the float switch.
- Turn the thermostat to 0 position.
- Drain the boiler.

WARNING: Danger of being scalded by hot water!

- Pack the dispenser in such a manner that a safe transport is guaranteed. Use the original packaging if possible. (Fig.1, 2)

- When used dispensers are stored intermediately for a long time, ensure that the hose between the inlet valve and the boiler is empty to avoid spoiling the taste.

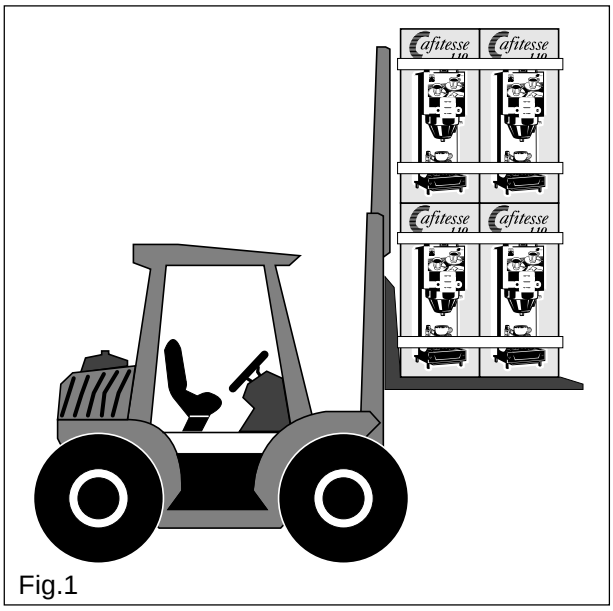


Fig.1

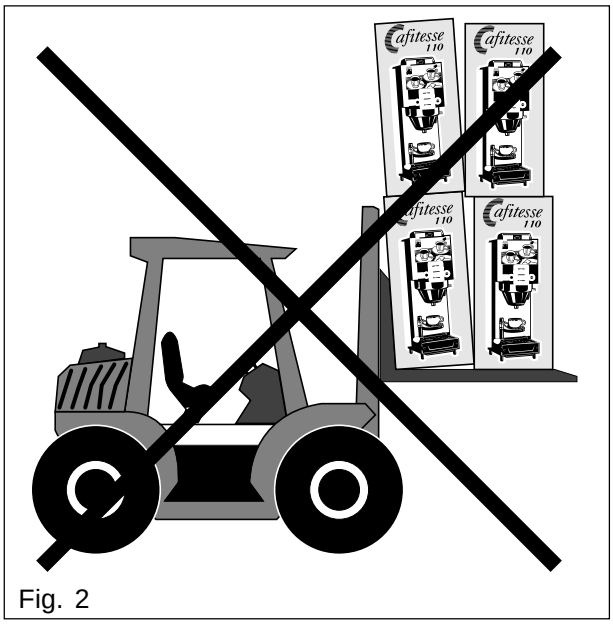


Fig. 2

Original packaging by the manufacturer

- European pallets (0.80 m x 1.20 m)
  12 Cafitesse100 (max. 2 piles of 6 dispensers)

- U.S. pallets (1.00 m x 1.20 m)
  Special pallets made of wood treated against parasites.
  12 Cafitesse100 (max. 2 piles of 6 dispensers)

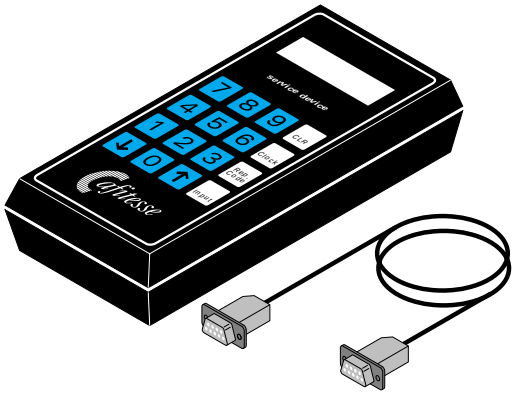
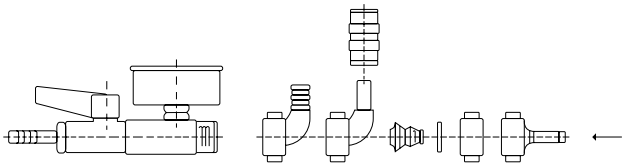
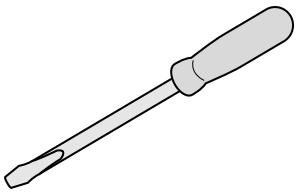
Storage requirements

- **Ambient temperature**: 5 °C - max. 32 °C
  (41 °F - max. 90 °F)

2.2 Installation Requirements

2.2.1 Tools

- The following tools are required for installation.

Tool:	required for:	
1. Service device Part number see spare parts list	Programming	
2. Pressure gauge Part number see spare parts list	Measuring the water pressure	
3. Several screw drivers Part number see spare parts list	e.g. adjustment of voltage selector	

2.2.2 Water Supply

Customer	Dispenser
Recommendation: Water supply line with stop valve and non-return valve. Connection to hot water line only with suitable supply lines. Supply system Temperature: max. 75 °C (167 °F) Dynamic pressure: min. 0.8 bar at 6 l/min. (11.6 PSI at 1.32 UK gal/min/ 1.59 US gal/min) Static pressure: max 10 bar (145 psi)	Connections for hoses: R3/4''-3/8UNF USA/CAN R3/4-R3/4 (Europe) R3/4-R3/8 (The Netherlands) USA: The dispenser must be installed with an adequate return flow protection that complies with local regulations.

CAUTION: Check the drinking water quality before the installation especially when installing a tank for manual filling.
A drinking water filter is recommended.

CAUTION: When using new water pipes, flush them sufficiently before the installation. Read local regulations carefully when choosing supply lines. Only use neutral material with respect to taste.

2.2.3 Electrical Supply

Customer	Dispenser
Recommended: Fault current safety switch and an all poles controlling contact breaking device. **Requirements:** An earthed connection is required. The mains connection must match the dispenser output (socket). Each dispenser must be protected.	National plug on power supply cable. Length of the power supply cable approx. 1.80 m (71 in)

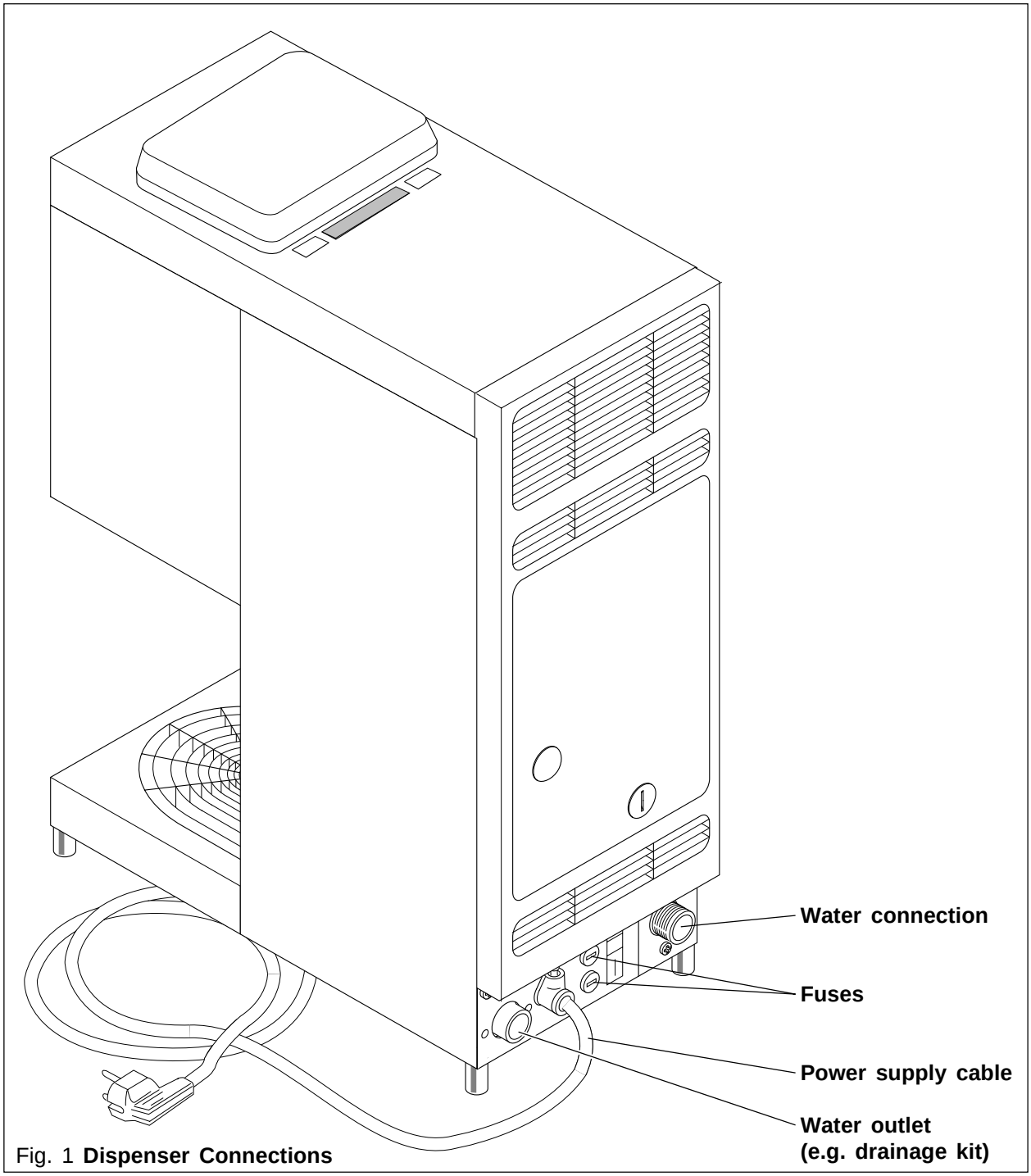


Fig. 1 **Dispenser Connections**

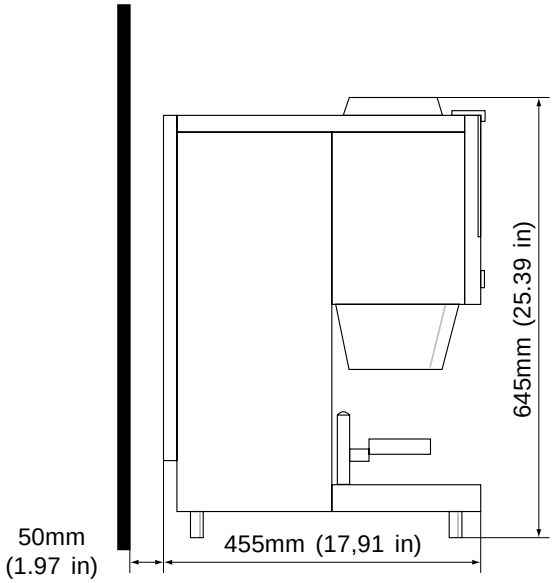
Dispenser Types (Mains Voltage)

		Voltage	Heating capacity	Type *	Country	Approval
Cafitesse 110	without counter/ key switch	100 Volt,	1.4 kW	A-12-F	Japan	–
		120 Volt,	1.4 kW	A-08-F(B)	USA	UL, CSA, NSF
		200 Volt,	3.0 kW	A-13-F	Japan	Radio protect
		200 Volt,	3.0 kW	A-14-F	Japan	Radio protect
		220 Volt,	3.0 kW	B-60-F(B)	Korea	VDE, CE
		230 Volt,	2.0 kW	B-05-F(B)	Scand.	VDE, CE
		230 Volt,	3.0 kW	B-58-F(B)	Israel	VDE, CE
		230 Volt,	3.0 kW	B-39-F(B/U)	Europe	VDE, CE
		208-240 Volt,	3.0 kW	A-07-F(B)	USA	UL, CSA, NSF
		208-240 Volt,	3.0 kW	A-17-F(B)	Mexico	UL, CSA
		240 Volt,	2.7 kW	B-03-F(B)	UK/Austr.	VDE, CE
	with counter/ key switch	230 Volt,	2.0 kW	B-10-F(B/U)	Scand.	VDE, CE
		230 Volt	2.0 kW	B-55-F(B)	Germany	VDE, CE
		230 Volt,	3.0 kW	B-15-F(B)	Netherl.	VDE, CE
		230 Volt,	3.0 kW	B-31-F(B)	Germany	VDE, CE
		240 Volt,	2.7 kW	B-41-F(B)	GB	VDE, CE
Cafitesse 120	without counter/ key switch	100 Volt,	1.4 kW	A-21-F	Japan	VDE, CE
		200 Volt,	3.0 kW	A-19-F	Japan	–
		220 Volt,	3.0 kW	B-59-F(B)	Korea	VDE, CE
		230 Volt,	2.0 kW	B-50-F(B)	Scand.	VDE, CE
		230 Volt,	3.0 kW	B-38-F(B/U)	Europe	VDE, CE
		208-240 Volt,	3.0 kW	A-20-F(B)	Caribbean	VDE, CE
		208-240 Volt,	3.0 kW	A-18-F(B)	Mexico	UL, CSA
		240 Volt,	2.7 kW	B-46-F(B)	UK/Austr.	VDE, CE
	with counter/ key switch	230 Volt,	2.0 kW	B-47-F(B)	Switzerl.	VDE, CE
		230 Volt,	2.0 kW	B-56-F(B)	Germany	VDE, CE
		230 Volt,	3.0 kW	B-40-F(B)	Europe	VDE, CE
		230 Volt,	3.0 kW	B-53-F(B)	Germany	VDE, CE

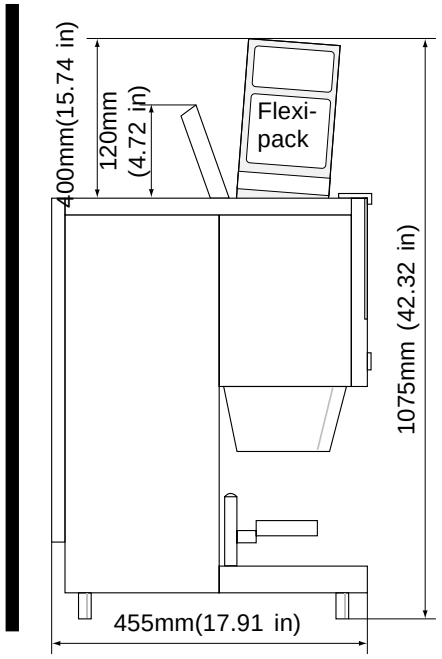
* The additional letter **B** (e. g.: SATA07F**B**) indicates dispensers with 'Douwe Egberts' branding stickers. (see chap. 10)
The additional letter **U** (e. g.: SATB39F**U**) indicates dispensers with 'Universal' branding stickers. (see chap. 10)

2.2.4 Space Requirements

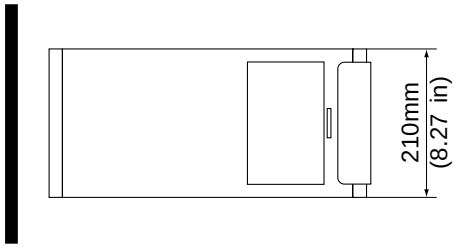
Space requirements
when the cooling compartment lid is closed:



Space requirements
when the cooling compartment lid is open:



Plan view:



Minimum requirements for floor, walls and ceilings in the area of the dispenser:

Floor : Even, nonskid floor
Walls : There are no particular requirements for walls since the dispenser is not designed for wall mounting.
Ceiling : Dustfree, clean

2.2.5 External Options

(to be used by Opcos and distributers for national information (e.g. via external filters))

2.3 Unpacking

2.3.1 Unpacking the Dispenser

- Remove the fastener from the cardboard box carefully. Do not use sharp utensiles to avoid scratching the dispenser.
- Remove the cardboard box clamps.
- Open the cardboard box and cut it carefully if necessary.
- Pull the dispenser with the styrofoam packaging out of the cardboard box and place it upright.
- Remove the styrofoam packaging.
- Check if all mounting kits are included (see below).

2.3.2 List of all Items that are supplied with the Dispenser

Description	Included in:
Operating instructions	Country kit[1]
Cooling compartment sticker	Country kit[1]
Cleaning card	Country kit[1]
Cleaning brush	Country kit[1]
Buttons	Partly in country kit[1] (depending on the country)
Connecting pieces for water inlet	Cooling compartment[2]
Electric diagram	Inner side of the back wall
Keys[3] (2 pieces)	Dispenser
Sticker, control card	Cooling compartment
Cup carrier	Cooling compartment

[1] stand alone packaging unit
[2] country specific, partly included in the country kit
[3] key switch available with this version

2.3.3 Disposal of Packaging and Dispenser at the End of their Service Life

Used packaging:

Packaging	Material*
Outer cardboard box	Cardboard **
Inner packaging	EPS***

* Disposal of material must always be done in accordance with
- national,
- legal,
- safety requirements and
- environmental requirements!

** Composition:
Liner : Kraft liner, GSM substance 150g/m^2 , marbled colour
Fluting paper : Wave substance, GSM substance 105g/m^2, brown colour
Inner paper : Duplex, GSM substance 170g/m^2, brown colour

*** Styrofoam-polystyrene with pentane (CFC-free)

2.4 Installation / Putting into Operation

- Before starting the installation:
  - Observe the specifications on the rating plate (on the left side of the housing)
  - Check the monophase plug and ensure that national voltages and tolerances are provided.
  - Ensure that the fuse of the group to which the dispenser is connected is in accordance with the national regulations.
  - Contact the local power supply company to ask for the voltage values and tolerances if required.
  - Measure the water pressure.
  - Measure and check the power voltage.

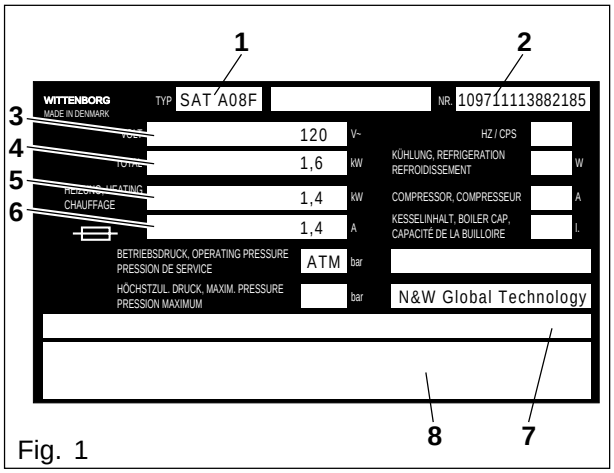


Fig. 1

- Legend of the rating plate (Example fig. 1):

  1 Machine type
  2 Machine number
  3 - 6 Electric connection values
  7 Water pressure indications
  8 Approval

Measuring the water pressure
(not concerning the water tank version)

- Static and dynamic pressure can be checked by using the water pressure measuring device which is available as a service part. (Fig. 2).

- Pressure should be checked under the most unfavourable conditions, e.g. when all remaining power consuming locations are opened (dynamic) and when all are closed (static).

- Connect the pressure gauge to the water pipe with a pressure hose and one of the 4 connections **A**, **B**, **C** or **D** which are supplied with the testing device. It is also possible to use the hose which serves for connecting the dispenser later.

- Close the water tap located on the pressure testing device and open the stop valve in the water pipe completely.

- Position the outlet above a container and open the tap. Read the dynamic pressure on the pressure gauge. The pressure should always be over 0.8 bar (11.6 psi).

If the outlet needs to be extended, use a hose with an interior diameter of at least 15 mm (0.59 in).

- Close the tap and read the static line pressure on the pressure gauge. The value should be less than 10 bar (145 psi).

- Close the stop valve of the water pipe. Remove the water pressure measuring device and connect the dispenser to the water supply.

- Ensure that the water stop valve connected to the supply line seals properly.

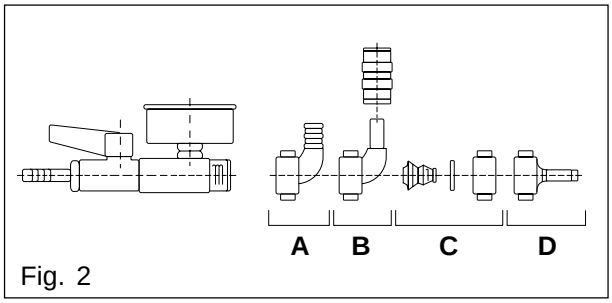


Fig. 2

- The dispenser may be installed on a flat, even counter, table, base stand or on a wall-mounted table.
- If there are no even installation surfaces, the dispenser must be aligned.
- A minimum clearance of 5 cm (1.97 in) must be maintained at the back panel of the dispenser to ensure enough cooling.
- 2 packagings are supplied:

  1. Standard dispenser
  2. Country kit with national accessories.

- Measure the water pressure (see chap. 2.4).
- Measure the supply voltage.
- Unpack the dispenser (see chap. 2.3).
- Place the dispenser on a table.
- Remove the operating panel cover (**1**), the front cover (**2**), the housing cover (**3**) with cooling compartment lid (**4**) and air duct (**5**) (Fig. 3).

CAUTION: **When the front cover is made of glass, there is the danger of being injured due to incorrect handling or breaking of the glass.**

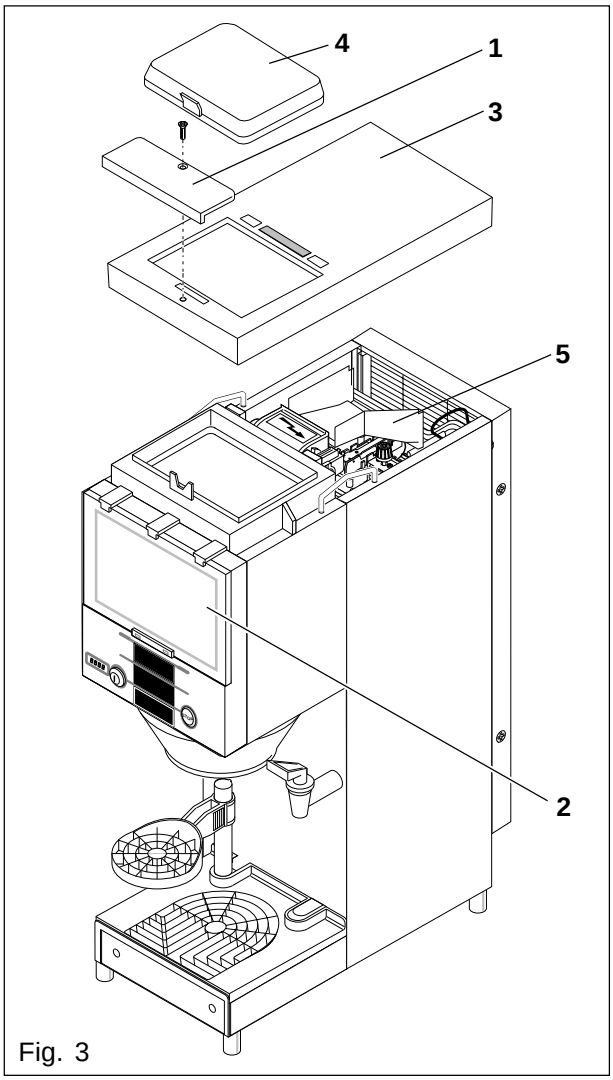


Fig. 3

- Adhere the cooling compartment sticker of the country kit on the inside of the cooling compartment lid (**4**) (Fig. 3).
- Lift the floater wire (**7**) from transport position and place it above the operating lever (**6**) of the float microswitch (Fig. 4).

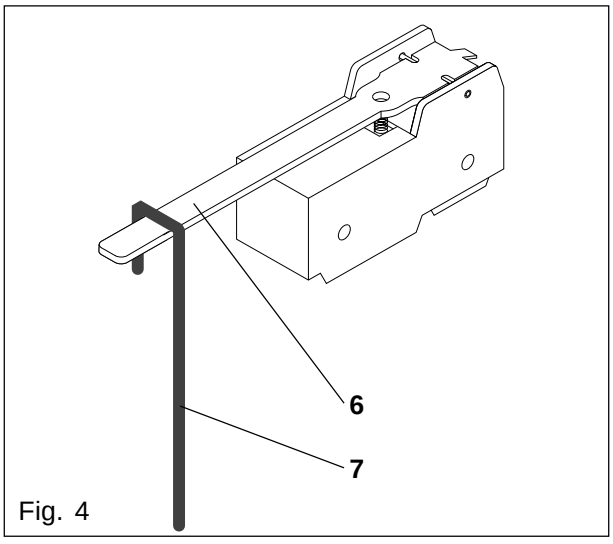


Fig. 4

- Ensure that the thermostat (**1**) is turned counterclockwise to zero (until stop) (Fig. 5).

CAUTION: **If the thermostat is not turned to zero, the dispenser will heat and the capillary tube limiter will be released.**

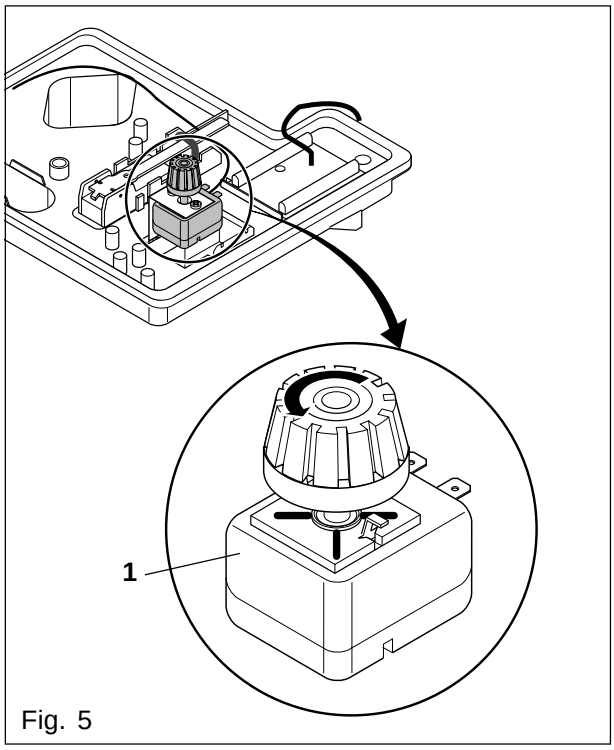


Fig. 5

- Dispensers designed to be operated with 208-240 V 60 Hz (USA/Canada) are equipped with a voltage selector located on the back panel of the dispenser (Fig. 6).
- Adjust the voltage selector (**2**) before connecting the dispenser to adapt the dispenser to the mains voltage (Fig. 6).
- For the adjustment loosen the fuse holder and turn the adjusting bush (**3**) by means of a screwdriver until the marking arrow points to the correct voltage mark (Fig. 6).

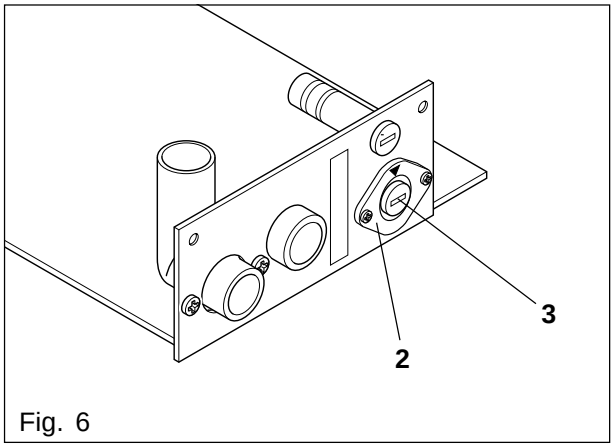


Fig. 6

- Insert both lower buttons (**1**) (Fig. 7).
- Leave the upper button (**2**) free for programming (Fig. 7).

Set the key to **ON** with dispensers equipped with a key switch.

- Mount the cup carrier (**3**) (Fig. 8).
- Connect the water supply and open the water stop valve in the water pipe.
- Insert the power supply plug.
- Switch on the main switch. Water should now flow into the boiler.
  Observe if the floater switches off.
- The fan must now be operating to cool the cooling compartment. The yellow LED (**4**) extinguishes as soon as the cooling compartment has reached the correct temperature. (Fig. 8)
- Place a container below the hot water delivery tap (**5**) at the front of the dispenser and open the tap. (Fig. 8)
  Observe if the boiler is being refilled with water at the same time.

WARNING: **There is the danger of being scalded by hot water. Keep hands and other parts of the body away from the delivery area.**

- Observe the floater wire (**6**) during the filling process. In the beginning the floater wire (**6**) should fall down and then rise. This indicates that water is running into the boiler faster than it is taken from it. (Fig. 9)
- Stop actuating the hot water delivery tap to allow the boiler to be filled completely. Observe again if the floater wire switches off.

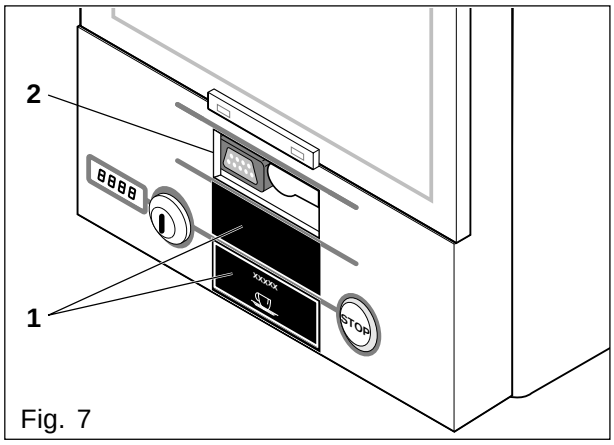


Fig. 7

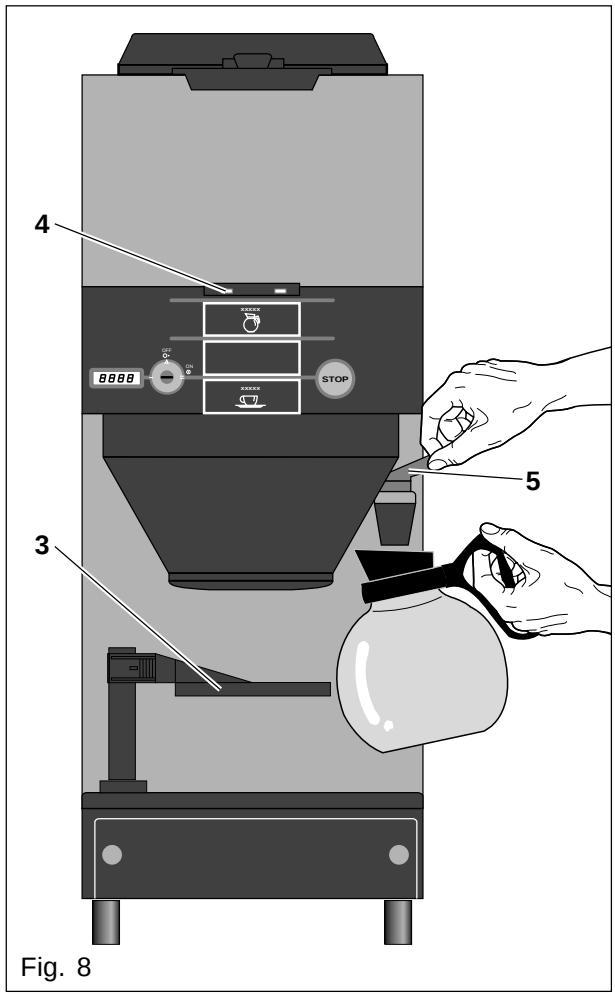


Fig. 8

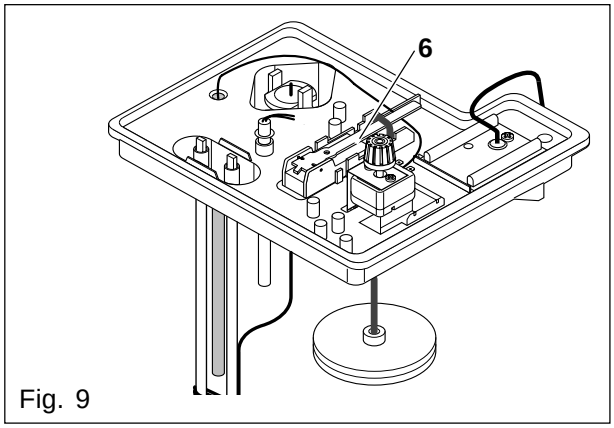


Fig. 9

- Turn the thermostat regulator (**7**) clockwise up to the stop, to the maximum temperature of 95 °C (171 °F). (Fig. 10)
- Ensure that the dispenser heats up and is switched off. (Low temperature indicator (**8**) extinguishes.). (Fig. 11)
- In this case switch off the main switch (**9**) of the dispenser, and disconnect the power supply plug (Fig. 11).
- Mount the back panel, the air duct and the housing cover with the cooling compartment lid.
- Remove the foil from the front cover and the splash panel.
- Insert the advertising panel and the front cover (**10/11**). (Fig. 11)

CAUTION: **When the front cover is made of glass, there is the danger of being injured due to incorrect handling or breaking of the glass.**

- Degrease the housing wall thoroughly at which the card holder (**12**) is to be installed. (Fig. 11)
- For degreasing, it is recommended to use a mixture of 50% isopropanol and 50% water.
- Mount the card holder (**12**) to the dispenser. (Fig. 11)
- Insert the documents into the card holder.

CAUTION: The last page of the Quick Reference card (Cleaning Report) has to be copied, has to be filled in by the trained Cleaning Personal and has to be filed up.

- Connect the power supply plug again.
- Switch the dispenser on at the main switch (**9**). (Fig. 11)
- Programme the dispenser in accordance with the customer's demands (see chap. 4). Factory settings: see chap. 4.

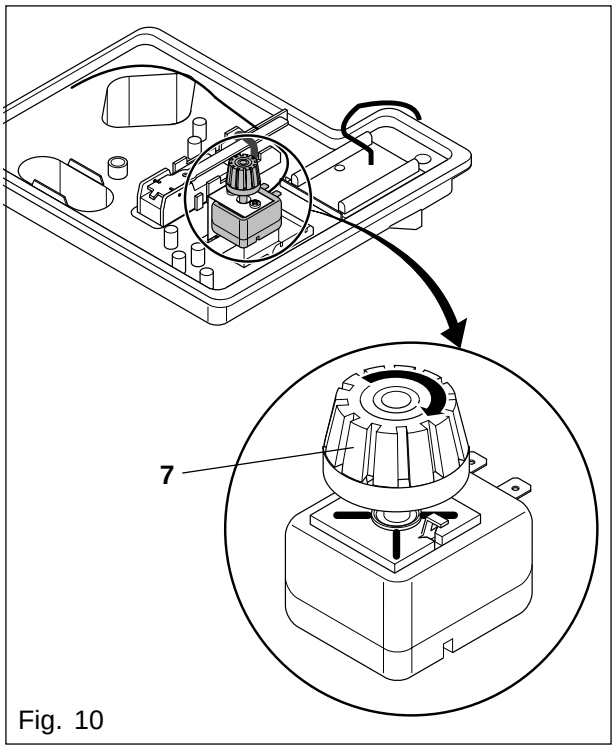


Fig. 10

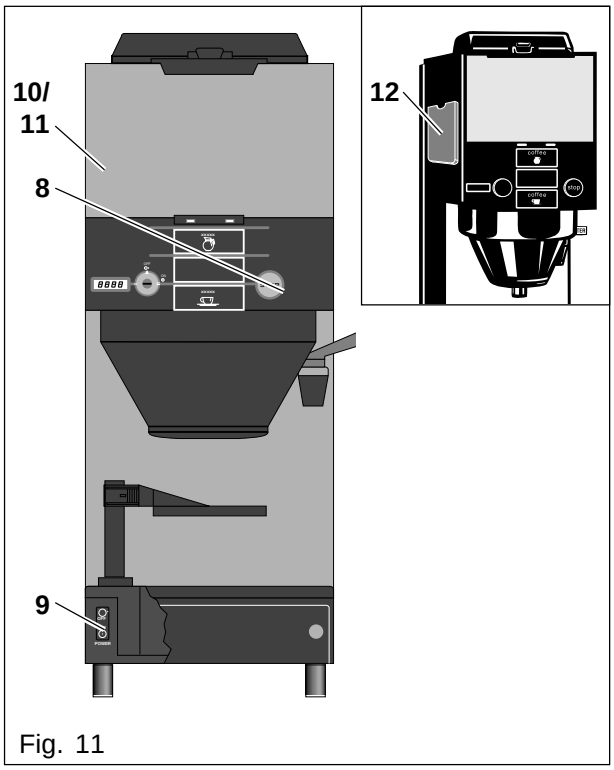


Fig. 11

The bush (**1**) for the service device is located behind the upper button. Insert the upper button (Fig. 12).

- Place a container below the hot water delivery tap.
- Let at least 6 l (1.32 UK gal/1.58 US gal) of water run through the boiler by actuating the hot water delivery tap in order to rinse the boiler (Fig. 8).

WARNING: **There is the danger of being scalded by hot water. Keep hands and other parts of the body away from the delivery area.**

- Remove the protective foil from the splash panel before putting the dispenser into operation.
- Insert the flexi-pack.
- Carry out a functional check of the dispenser.
- Hand over the operating instructions to the customer.
- Instruct the customer how to operate the dispenser.

Remark regarding the cup carrier:

- The turn lift support (**2**) can be attached to the right side of the dispenser if necessary. In this position the cup carrier (**7**) is turned to the right side during the filling of pots. (Fig. 13)
- To remove the support, pull the torsion spring (**3**) downwards and withdraw the support pin (**4**) from the bottom side of the drip tray support. (Fig. 13)
- Remove the dummy plugs (**5**, **6**) and install the turn lift support (**2**) on the right (Fig. 13).
  The tension of the torsion spring can be changed. Adjust the tension of the torsion spring in such a manner that the turn lift support does not rebound when it is locked. (Fig. 14)
- Mount the dummy plugs (**5**, **6**) to the left side. The cup carrier locks when it is turned towards the right side (Fig. 13).
- Adjust the height of the cup carrier (for the delivery of cups). (Fig. 15)

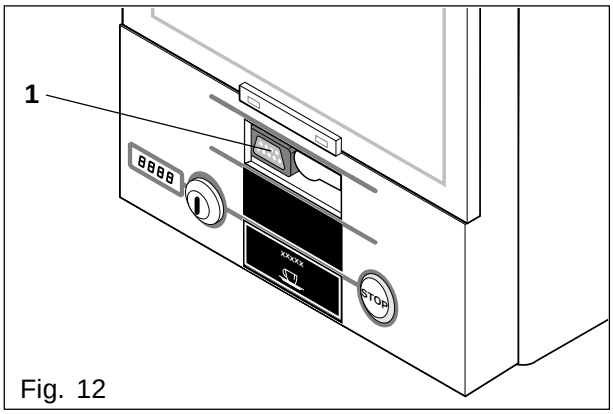


Fig. 12

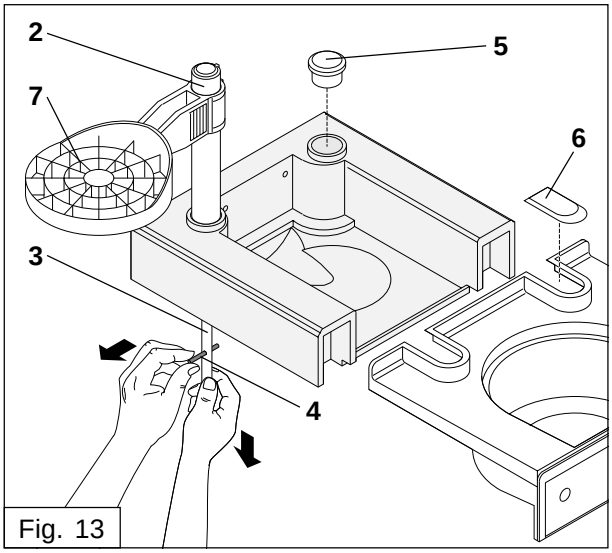


Fig. 13

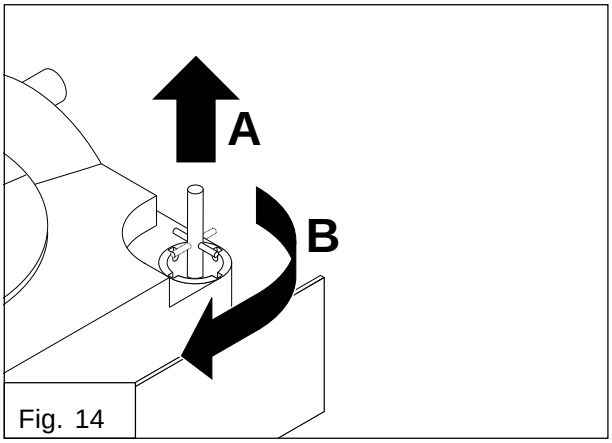


Fig. 14

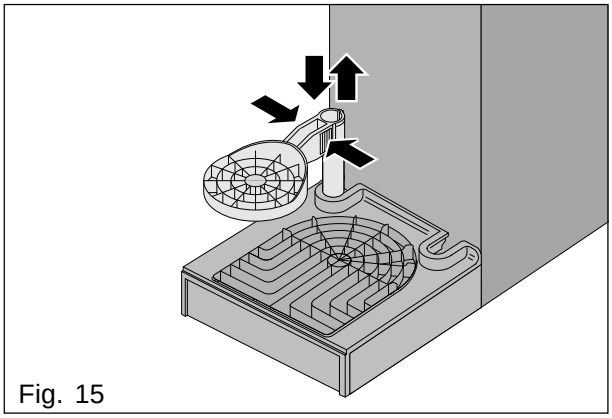


Fig. 15

Putting the dispenser into operation on ferries

- Dismount the overflow hose (**1**) provided by the manufacturer. (Fig. 1)
- Cut 365 mm (14.37 in) off from the hose (piece goods).
- Directly connect the boiler overflow chamber (**4**) and the outlet of the overflow tray (**3**) to the new hose (**2**). (Fig. 1)
- Connect the outlet hose.

A table fixing is not provided by the manufacturer. However, it is urgently recommended depending on the local conditions.

WARNING: **The dispenser only operates up to the following maximum tilts:**

Tilt to the left and front:
each 12°, i.e. 130 mm (5.12 in)

Tilt to the right and to the rear
each 10°, i.e. 110 mm (4.33 in)

WARNING: **There is the danger of being scalded by hot water. Keep hands and other parts of the body away from the delivery area.**

- If the tilts exceed these values
  - the water supply must be closed
  - the dispenser must be switched off with the main switch
  - the boiler must be drained via the hot water delivery tap
    (place a sufficiently large container underneath the hot water delivery tap)
- If the tilt decreased again below the above mentioned values:
  - open the water supply
  - switch the dispenser on.

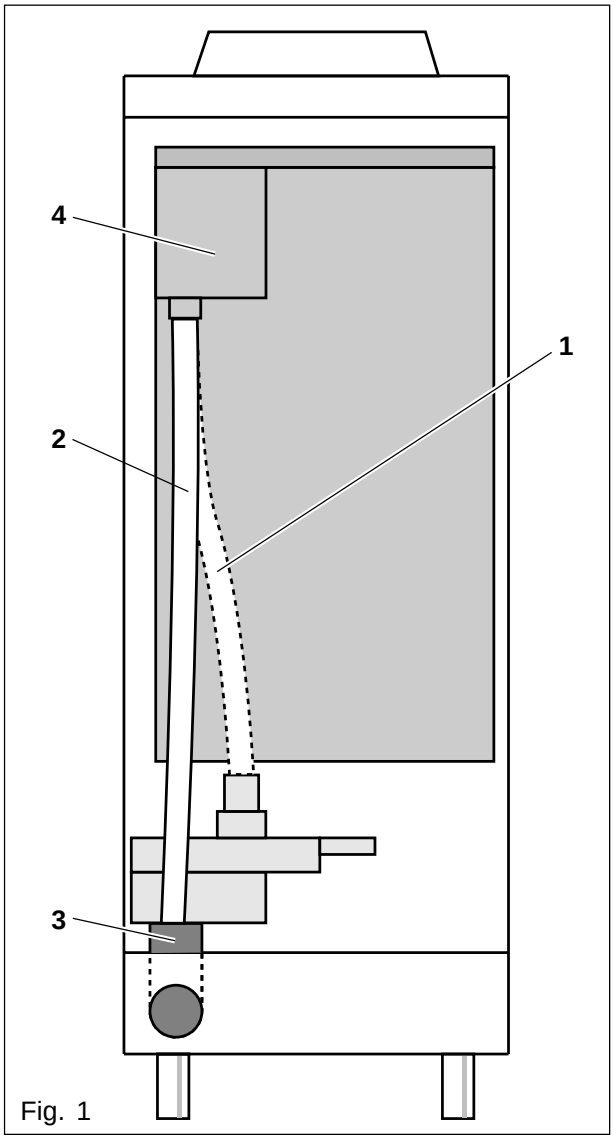


Fig. 1

2.5 Checklist: Instructions for the Customer

2.6 Transfer of the Dispenser to the Customer

(incl. HACCP= Hazard and Critical Control Points)

2.7 Technical Data *(Total Overview)*

Dimensions:
Height: 645 mm (25.39 in) (C110/C120)
Width: 210 mm (8.27 in)
Depth: 455 mm (17.91 in)

Weight:
21 kg (46.3 lbs) (empty)

Water connection*:
3/4" connection to inlet valve
Drinking water line with stop valve.
Connection to warm water line only with matching feedings
Supply system requirements:
Water inlet temperature: max. 75°C (167°F)
Dynamic pressure: min. 0.8 bar at 6 l/min(11.6 psi at 1.32 UK gal/min/1.59 US gal/min)
Static pressure: max. 10 bar (145 psi)

Tank top version:
Tank on the dispenser for manual filling.
Capacity:
4 l (0.88 UK gal/1.06 US gal)

Cold water connection for café cool (option):
Dynamic pressure: min. 0.8–4 bar at 1.2 l/min(11.6-58.02 psi at 0.26 UK gal/min/0.32 US gal/min)
Static pressure: max. 7 bar (101.53 psi)

Water filling amount:
6.5 l (atmospheric boiler) (1.43 UK gal/1.72 US gal)

Concentrate capacity:
Coffee and tea flexy-pack with 2 litres contents each (0.44 UK gal/0.53 US gal)

Electrical Connection values:

Tolerance	Voltage	Heat capacity (over- and undervoltage)	Total output
100 V	+/-10 %	1.4 kW	1.6 kW
120 V	+/-6 %	1.4 kW	1.6 kW
200 V	+/-10 %	3.0 kW	3.2 kW
230 V	+6 %/-10 %	2.0 kW	2.2 kW
230 V	+6 %/-10 %	2.7 kW	3.0 kW
230 V	+6 %/-10 %	3.0 kW	3.2 kW
240 V	+/-6 %	3.0 kW	3.2 kW
240 V	+/-6 %	2.7 kW	2.9 kW

Electric connection:
A fuse must be provided in the mains supply line

Length of power supply cable:
approx. 1.80 m (70.87 in = 5.9 ft)
The dispenser is delivered with national power supply cable.

Boiler:	Open system, filling capacity 6.5 l (1.43 UK gal/1.72 US gal) electromechanical water temperature regulator, dry running protection (supervision by means of heating element temperature limiter, electronic low temperature indicator/boil over sensor, boil over protection by means of safety thermostat)
Boil over sensor:	Triggering temperature: 90 °C - 8 K (164 °F) Triggering temperature > 2000 m (6561.68 ft): 85 °C - 8 K (155 °F)
Beverage delivery capacity:	approx. 300 cups/hour at 230 V/3 kW or approx. 200 cups/hour at 230 V/2 kW
Cooling:	Thermoelectric cooling: Peltier element, axial blower electronic control, pulse-mode operation power consumption approx. 40 W (without fan).
Dosing systems:	Pulse dosing system, dosing coil electronically controlled, pulse operated pump integrated with non returnable concentrate pack, electronic concentrate empty indicator.
Delivery modes:	Adjustable delivery mode, size of a portion and beverage strength delivery modes: portioned, portion repetition or continuously (see programming) outlets, delivery tap for permanent hot water delivery
Further requirements for installation:	Height: up to 2000 m (6561.68 ft) Ambient temperature: 5°–max. 32 °C (41°–max. 89.5 °F) Distance to wall: 50 mm (2 in) (rear of the dispenser)

The dispenser is drip-proof and is suitable for indoor use only.

Approvals see there.

Table of Contents

Faults ***3***

Support for Fault Diagnosis ***3.1***

Fault Diagnosis ***3.2***

General Malfunctions 3.2.1
Water System Malfunctions 3.2.2
Cooling System Malfunctions 3.2.3
Dosing System Malfunctions 3.2.4
Heating Plate Malfunctions (Option) 3.2.5
Key Switch/Counter Malfunctions (Option) 3.2.6
Indicated Malfunctions 3.2.7

Faults occurred in the Market and their Solutions ***3.3***

3 Faults

3.1 Support for Fault Diagnosis

Step	if yes	if no
1 Ask customer for detailed information about malfunction and backgrounds		
2 Are the malfunctions displayed on the dispenser? Which displays?	see 3.2	see 3.2 or perform step 3
3 Is the problem described in 3.3?	proceed as described in 3.3	perform step 4
4 Is the current supply okay?	perform step 5	see 3.2
5 Is the DC supply okay?	perform step 6	see 3.2
6 Is the water supply okay?	perform step 7	see 3.2
7 Are the flexy-packs inserted correctly and full?	see 3.2	see 3.2

3.2 Fault Diagnosis

General:

- The list of possible faults and the appropriate trouble shooting is divided into two main groups:

  - Faults, which are not indicated, but which can be localised due to particular malfunctions of the dispenser,

  - faults, which are indicated via LEDs and/ or displayed on service device 2.

  - yellow LED OFF: correct water temperature in the boiler and in the cooling compartment
    yellow LED constantly ON: water temperature in the boiler too low. Correct cooling compartment temperature
  - yellow LED flashes (short flash frequency): correct water temperature in the boiler. Incorrect cooling compartment temperature
  - yellow LED flashes (long flash frequency): water temperature in the boiler too low. Incorrect cooling compartment temperature

- Some faults are indicated by LEDs which are flashing either individually or in combination with other LEDs.

- The fault diagnosis takes precedence over the normal display function.

Fault localisation

- Connect the service device and switch it on.

- Switch off the main switch of the dispenser.

Resetting the fault display after repair work

- Disconnect the power supply plug.

DANGER: **The beverages delivered by the dispenser are hot! To prevent scalding, keep hands (and/or other parts of the body) away from the beverage outlet area when beverages are prepared and during the functional test.**

DANGER: **Never insert the power supply plug of the dispenser into a wet or damp socket. The plug itself must not be wet or damp either. Also never insert or remove the plug from the socket with wet hands.**

DANGER: **The dispenser and the service device are equipped with a lithium battery.**

There is the danger of an explosion due to mishandling. The battery may not be recharged, disassembled, short-circuited, burnt or exposed to temperatures above 100 °C or water. Replace it only with a battery of the same type. Spent batteries must be disposed of properly.

DANGER: **Safety devices must not be bridged or put out of operation.**

WARNING: **Use only original spare parts when repairing the dispenser; otherwise the manufacturer cannot be held liable.**

WARNING: **If the dispenser is equipped with a heating plate, do not touch the heating plate. There is the danger of being burnt.**

CAUTION: **It is provided that the control system has been programmed in accordance with the dispenser's requirements. The following list of possible faults does not consider any programming errors.**
Therefore it is recommended to check the programming of the control system first by means of service device 2 before carrying out any trouble shooting according to the following chapter.

3.2.1 General Malfunctions

Fault	Possible cause	Remedy
The dispenser does not operate	1. Connections to the power supply or power supply plug are unplugged	1. Check connections. If **not ok**: Connect supply lines correctly.
	2. Mains fuse blown	2. Insert correct fuse. Check voltage of power supply socket with voltmeter. If the fuse blows again, the fault may concern either heating (ground short circuit), power supply (transformers), or damage caused by water. When mounting the dispenser: Check if the dispenser heating capacity exceeds that of the local supply network –> replace the dispenser.
No dispenser function except for cooling system	1. Main switch OFF	1. Switch the dispenser on.
	2. Main switch defective	2. Check the connections of the switch. If the connections are okay, replace the switch.
No function except for cooling system and heating	1. Fuse F05 of power supply defective	1. Check connection of the fuse F05 with multi-meter (adjust to Ohm). If no connection: Replace the fuse.
	2. Defective transformer T02	2. Check the output for 25 V alternating voltage (see chap. 5K - Electric Diagramm). If not 25 V: Replace the transformer.
	3. With dispensers equipped with voltage selector: Voltage selector adjusted incorrectly or defective	3. Adjust the voltage selector to mains voltage or replace it.
	4. Defective control unit	4. Replace the control unit (see chap. 5K.2).
	5. Key switch "off"	5. Position the key switch to "on".
No STOP function	1. Control unit defective	1. Replace the control unit (see chap. 5K.2).
	2. Stop button defective	2. Replace the stop button.
	3. Cable harness defective	3. Check the cable harness for transmission. If no transmission: Replace the cable harness.

3.2.2 Water System Malfunctions

Fault	Possible cause	Remedy
Water runs from overflow when dispenser is switched on	1. Float guide is blocked due to calcification	1. Decalcify the boiler.
	2. Float switch defective	2. Check the water inlet valve for 25 V alternating voltage when the float switch arm is completely lifted. If **25 V**: Replace the float switch.
	3. Inlet valve does not close	3. Replace the inlet valve. Also on installation: Rapidly open and close the water tap several times, in order to achieve easy operation of the valve after possible long storage (dynamic pressure).
Water runs from overflow when dispenser is switched off	1. Inlet valve defective	1. Replace the inlet valve (see chap. 5A.2).
Water leaks from trough	1. Trough is calcified: outlet valve tappet does not seal	1. Dismount and clean the tappet. Decalcify the boiler (see chap. 5A.2).
	2. Tappet lip seal damaged	2. Replace the lip seal.
	3. Ventilating hose in outlet elbow blocked or bent	3. Clean or replace the hose.
Water leaks from drain valve	1. O-ring of outlet elbow damaged or elbow deformed	1. Replace O-ring/elbow (see chap. 5A.2).
	2. Supporting ring overturned	2. Replace the boiler if the locking mechanisms at the outlet are destroyed.
Dispenser delivers concentrate but no water. Boiler filled	1. Outlet valve tappet blocked	1. Dismount and clean the tappet. Decalcify the boiler (see chap. 5A.2).

Fault	Possible cause	Remedy
The dispenser delivers concentrate but no water. Boiler empty	1. Main valve in the water pipe is closed	1. Open the main valve.
	2. Pipe is blocked or supply insufficient	2. Check the pipe pressure with water pressure measuring device. Open the water tap completely. If the water pressure is less than 0.8 bar (11.6 psi), the dispenser does not operate.
	3. Floater washer is blocked due to calcification	3. Decalcify the boiler.
	4. Inlet valve filter is blocked	4. Dismount and clean the filter.
	5. Float switch is defective	5. Check the inlet valve for 25 V alternating voltage when the float switch arm is completely depressed. If **25 V**: Replace the switch.
	6. Inlet valve coil is defective	6. Check the coil for 25 V alternating voltage. If **25 V**: Replace the valve (see chap. 5A.2).
Irregular water supply	1. Water level in the boiler varies, supply is insufficient	1. Check the flow rate. Check whether the pipe is blocked. Open the water tap completely. If the water pressure is less than 0.8 bar (11.6 psi), the dispenser does not operate.
	2. Control defective	2. Replace the control (see chap. 5K.2).
	3. Outlet valve is calcified	3. Clean the outlet valve.
Water is dripping from the hot water tap	1. Tap calcified or seal defective	1. Clean the tap or replace the seal.
Dispenser does not heat up the water	1. Power switch off	1. Switch on the dispenser.
	2. Thermostat off (–> dry running protection)	2. Adjust the thermostat. Reset the dry running protection.
	If the boiler is not filled completely:	
	3a Main valve in the water pipe is closed (–> dry running protection)	3a Open the main valve. Reset the dry running protection.
	3b Pipe is blocked or supply insufficient (–> dry running protection)	3b Check the pipe pressure by means of a water pressure gauge. Open the water tap completely. If the water pressure is less than 0.8 bar (11.6 psi) the dispenser does not operate. Reset the dry running protection.

Fault	Possible cause	Remedy
The dispenser does not heat up the water	4. Defective thermostat	4. Check the connection with maximum adjustments. If **no connection:** Replace the thermostat (see chap. 5A.2).
	5. Contacts of temperature limiter open or defective (–> dry running protection)	5. Press Reset button. Check the connection. If **no connection**: Replace the temperature limiter. Reset the dry running protection.
	6. Contacts of overflow safety thermostat open	6. Sensor tube calcified or reset the thermostat to zero (•) and check the connection. Decalcify the boiler or if connecting: Replace the thermostat, reduce the adjustment of the thermostat if required. Press Reset button.
	7. Defective heating element	7. Check the heating element for connection and short circuits, replace the heating element if required (see chap. 5A.2).
Water boils (steam)	1. Thermostat switches off too late – lime deposits in sensor tube	1. Decalcify the boiler.
	2. Thermostat adjustment is higher than required	2. Reduce the adjustment.
	3. Thermostat contacts are fixed	3. Reset the thermostat to zero (•) and check for connection, replace the thermostat if required.
Low temperature indicator does not operate	1. Defective LED, control unit or sensor	1. Disconnect the sensor plug ST04 from the control and bridge PINs 1 and 2 of BU04. LED **flashing**: Defective sensor —> Replace the sensor. LED **not flashing**: Defective LED or control unit —> Replace LED —> LED **not flashing**: Replace the control unit.
Yellow LED flashing (long flashing frequency) **Delivery blocked**	1. Water temperature in boiler <80°C (176°F) and 'Temp block=ON'	1. Wait until the water in the boiler has reached delivery temperature again. If the LED does not stop flashing, see 'The dispenser does not heat up the water'

3.2.3 Cooling System Malfunctions

Fault	Possible cause	Remedy
Yellow LED on operating panel is flashing (short flashing frequency), insufficient cooling. Temperature >11 °C (51 °F)	1. Power supply interrupted or dispenser disonnected from the mains supply for a longer time	1. Check the power supply. The flashing stops as soon as the correct temperature has been reached (after approx. 1 hour).
	2. Flexy-packs' temperature too high, was not thawed in the refrigerator	2. Replace the flexy-pack, follow filling and thawing requirements.
	3. Ventilating grid blocked	3. Clean. Place the dispenser with a distance to the wall of at least 5 cm (2 in).
	4. Heat sink or fan blocked	4. Clean.
	5. Fan defective	5. Replace the fan (see chap. 5F.2).
	6. Ambient temperature too high	6. Change the location of the dispenser.
	7. Wrong tolerance of the Peltier element	7. Disconnect sensor plug ST05 from the control unit and bridge PINs 1 and 2 of BU05. Measure the voltage above the multiplier. If the measured value is **out of** tolerance **0.1V < value < 0.32V**: Replace the Peltier element.
The cooling system does not run, the yellow LED on the control system is off	1. Break down of the fuse F04 in the power supply or of thermo fuse in the transformer T01 (USA/ Can) Transformer T01 or control unit defective	1. Disconnet plug ST07 from the control unit, replace the fuse, and check transformer T01 for 11-14V at PIN 5 and 2 (see chap. 5K.2). If **11-14V**: Replace the control unit. If **not 11-14V**: Replace transformer and fuse.
The cooling system does not run, the yellow LED on the control system is on	1. Temperature sensor or control unit defective	1. Disconnect sensor Bu05 from the control unit. Check if Bu06 carries 12 V at PIN 1 and 3. If **12V**: Replace the pipe. If not **12V**: Replace the control unit.
	2. Peltier element defective	2. Disconnect the sensor plug ST05 from the control unit and bridge PINs 1 and 2 of BU05. Measure the voltage above the multiplier. If the measured value is **out of** the tolerance **0.1V < value < 0.32V** Replace the Peltier element (see chap. 5F.2).

Fault	Possible cause	Remedy
Yellow LED at operating panel flashes (short flashing frequency), excessive cooling. Temperature below 0°C (32°F)	1. Control unit or temperature sensor defective, detached (no contact) or short circuit due to humidity.	1. Replace the sensor. If not remedied, replace the control unit (see chap. 5K.2).

3.2.4 Malfunctions Dosing System

Fault	Possible cause	Remedy
Dispenser does not deliver beverages	1. Empty flexy-pack (indicator 'empty' on)	1. Change the flexy-pack.
	2. Dispensers equipped with key switch: Switch is off or defective	2. Switch on or replace the switch.
	3. Connections of delivery button or button defective	3. Check the wiring. If o.k., check conduction of the switch. If **not o.k.**: Repair the wiring. If **no conduction** of the switch: Replace the switch.
	4. Defective fuse F05 at power supply	4. Replace the fuse.
	5. Defective transformer T02	5. Check the output for 25V AC. If **not 25V**: Replace the transformer.
	6. Incorrect setting of voltage selector or defective voltage selector	6. Set the voltage selector according to mains voltage or replace the voltage selector.
	7. Defective control unit	7. Replace the control unit (see Chap. 5K.2).

Fault	Possible cause	Remedy
Beverage strength varies, irregular concentrate dosing	1. Ventilation hose in the outlet elbow is blocked or bent	1. Decalcify or adjust the hose.
	2. Dosing system of flexy-pack defective	2. Replace the flexy-pack.
	3. Intervals of dosing pulses out of tolerances	3. Check if message "ERROR-last dosing" is displayed by means of service device 2. If no ERR is displayed, proceed with step 4. If ERR is displayed, proceed with 3a.
	3a Dosing system of flexy-pack or flexi-pack incorrectly inserted	3a If not o.k., insert the flexy-pack in accordance with instructions.
	3b Error of control unit	3b Replace the control unit (see chap. 5K.2).
	4. Conduction through concentrate coil out of tolerances	4. See step 3.
	5. Water level in the boiler varies, insufficient supply	5. Check the flow rate, check whether the supply line is blocked.
	6. Control unit defective	6. Replace the control unit (see chap. 5K.2).
"Empty" indicator on, flexy-pack full	1. Incorrect insertion of flexy-pack	1. Insert the flexy pack-in accordance with instructions, insert a new package if necessary.
	2. Transistor, diode in screened coil, or control unit defective	2. Disconnect ST08 from control unit. Check LED. If LED **flashes**: Replace the control unit. If LED **does not flash**: Replace diode/transistor. Check the 'empty' indicator and replace it if necessary.
"Empty" indicator off, but flexy-pack empty	1. LED, phototransistor, photodiode, or control unit defective	1. Bridge PINs 1 and 4 of Bu/St08: Check LED. If LED **flashes**: Defective transistor or diode —> replace. If LED **does not flash**: Defective control unit —> replace. Defective LED —> replace LED.

3.2.5 Malfunctions Heating Plate (option)

Fault	Possible cause	Remedy
Heating plates (option) do not work	1. Defective heating plate switch 2. Defective heating element	1. Check connections. Replace switch. 2. Replace the heating element (see chap. 5A.2).

3.2.6 Malfunctions Key Switch/Counter (option)

Fault	Possible cause	Remedy
Display defective or no display	1. Defective control unit 2. Defective display	1. Replace the control unit (see chap. 5K.2). 2. Replace the display.
Display cannot be reset to zero	1. Defective control unit 2. Defective key switch	1. Replace the control unit (see chap. 5K.2). 2. Replace the key switch.
Pots are not displayed when the stop button is pushed, however, stop function o.k.	1. Defective control unit	1. Replace the control unit (see chap. 5K.2).
Permanent memory is cleared, when the dispenser is switched off	1. Control unit's battery empty	1. Replace the battery. Disconnect the power supply plug after a few deliveries and reconnect after 30 seconds. If the battery is o.k., the display will show the number of deliveries.
Counter counts one cup too much	No defect. The control unit is set to mode "Counting cups per pot"	As the surplus cup will not be counted again after the next delivery, the total sum is correct.

3.2.7 Indicated Malfunctions

Fault	Possible cause	Remedy
Red LED: Flashing **Delivery: No Cooling: Yes** **Display: -Error- Water valve control**	Error in water coil circuit (safety circuit interrupts supply after 5 sec.)	
	• Open coil circuit: Defective wiring, coil or control unit	• Replace the control unit (see chap. 5K.2) - if not o.k. —> Check wiring - if o.k. —> change the coil
	• Coil permanently live	• Change the control unit (see chap. 5K.2)
	• Short circuit coil	• Change the coil (see chap. 5K.2)
Red LED: Flashing Yellow LED: Flashing (short frequency), when cooling compartment temperature > 11°C (51.8°F) **Delivery: Yes Cooling: No** **Display: -Error- Peltier control**	Error in Peltier circuit (safety circuit interrupts supply, when flowing current < 1A or > 4A)	
	• No current supply of the Peltier element - yellow LED at control unit OFF: Break down of fuse F04 in the power supply unit, or of thermo fuse in transformer T01 USA/ Canada. Transformer T01 or control unit defective	- Disconnect plug ST07 from the control unit, replace the fuse and check if PINs 5 and 2 of transformer T01 carry 11V-14V. If no voltage —> replace the transformer and the fuse. If voltage —> replace the control unit (see chap. 5K.2).
	- yellow LED at control unit ON: Defective temperature sensor or control unit	- Disconnect sensor BU05 from the control unit. Check if PINs1 and 3 of BU06 carry +12V. If voltage —> replace the sensor. If no voltage —> replace the control unit (see chap. 5K.2).
	• Circuit of the Peltier element not connected, short circuit or defective control unit	• Replace the control unit. If not o.k. —> replace the cooling unit (see chap. 5K.2)

Fault	Possible cause	Remedy
Red LED: Flashing **Yellow LED: Flashing (short frequency), when temperature 0°C (32°F).** **Delivery: Yes** **Cooling: Yes** **Display:** **-Error-** **Peltier control**	Error of the Peltier circuit • Peltier element continually powered	• Replace the control unit (see chap. 5K2).
Red LED: — **Yellow LED: —** **Delivery: Yes** **Cooling: No** **Display:** **-Error-** **Last dosing**	Display after each delivery: Dosing pulse was out of tolerances for the last dosing • Flexy-pack or dosing tube incorrectly inserted • Control unit error	• Insert flexy-pack in accordance with instructions. • Replace the control unit (see chap. 5K2).
Red LED: — **Yellow LED: —** **Delivery: Only water** **Display:** **-Error-** **Last dosing**	• Dosing tube of the flexy-pack defective • Control unit error • Defective flexy coil	• Change the flexy-pack. • Replace the control unit. • Replace the flexy coil.
Red LED: Flashing **Yellow LED: —** **Delivery: No** **Cooling: Yes** **Display:** **-Error-** **Bad dosing info**	• Parameters are not included on the NOVRAM • Defective NOVRAM • Defective control unit	• Replace NOVRAM (see chap. 5K2). • Replace NOVRAM (see chap. 5K2). • Replace the control unit.

3.3 Faults occurred in the Market and their Solutions

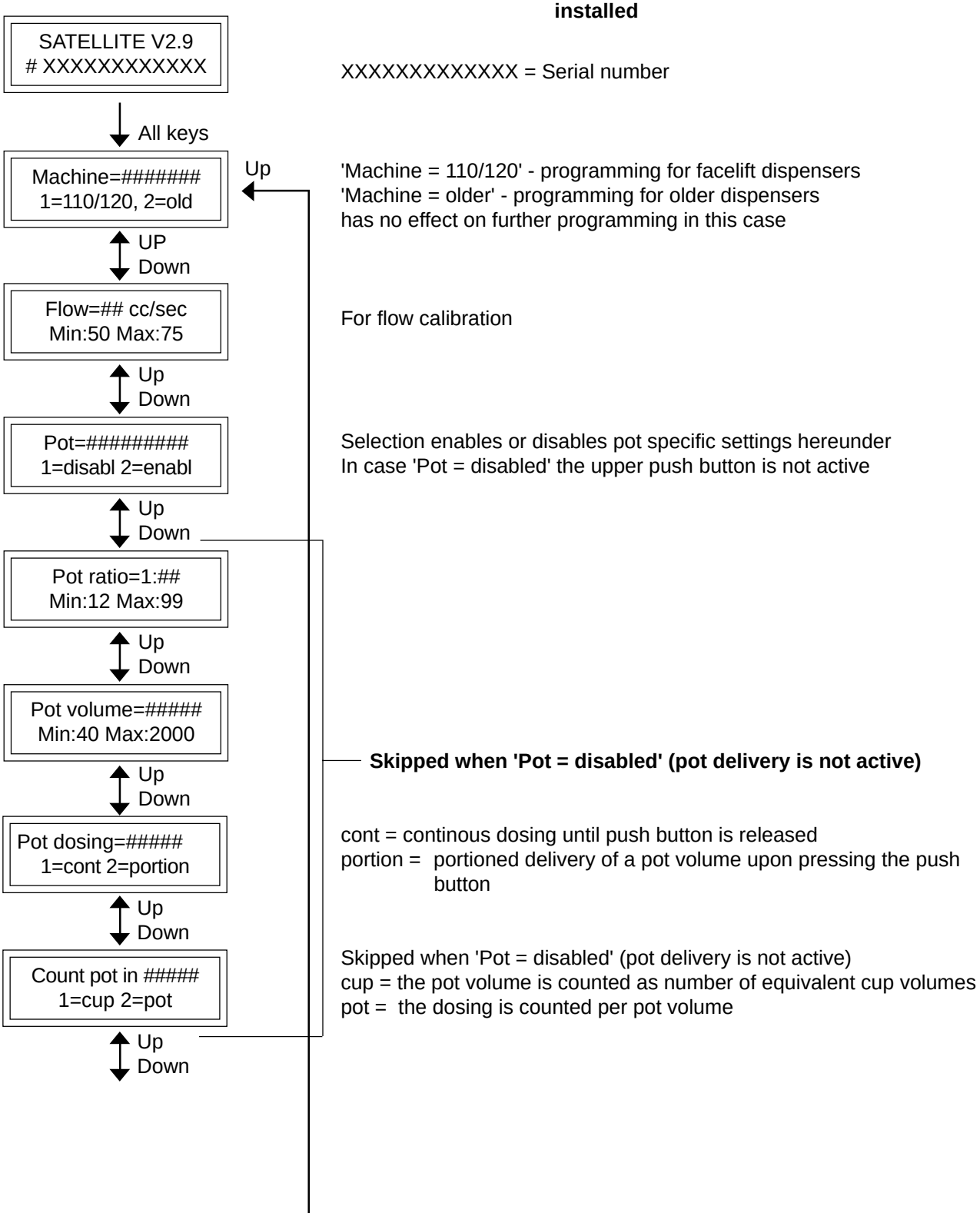
Table of Contents

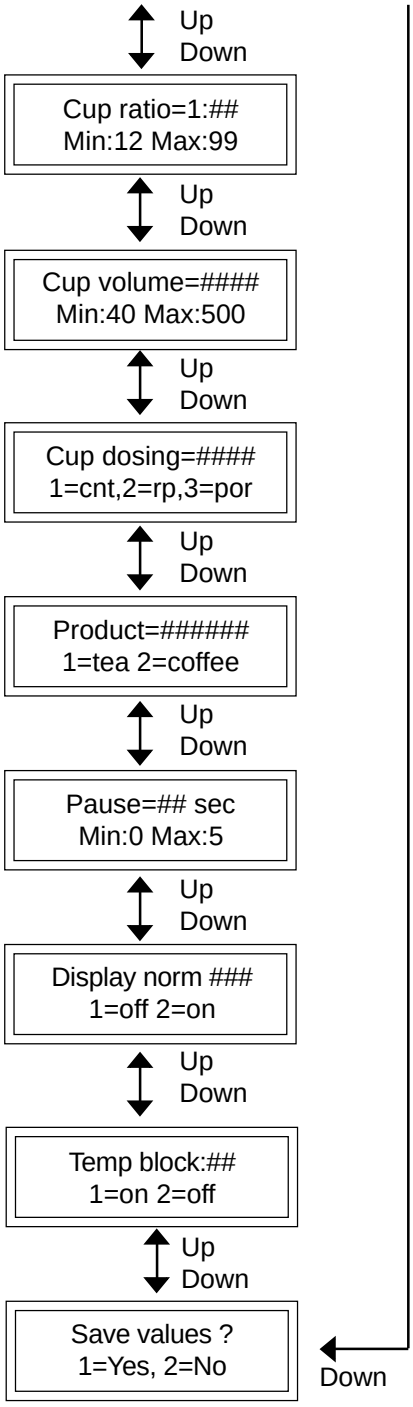
Programme Structure ***4.1***
Flow Charts 4.1.1
Programming Description 4.1.2
Programming for the Customer ***4.2***
Reading and Resetting Counters 4.2.1
Reading further Data ***4.3***

4.1 Programme Structure

4.1.1 Flow Charts

Cafitesse 110 service device programming mode – **no I2C Espresso interface board installed**





Concentrate/Water ratio for lower push button

cnt = continuous dosing until the push button is released
rp = delivery of repeated complete cup volumes until the push button is released
por = delivery of a single cup volume upon pressing the push button once

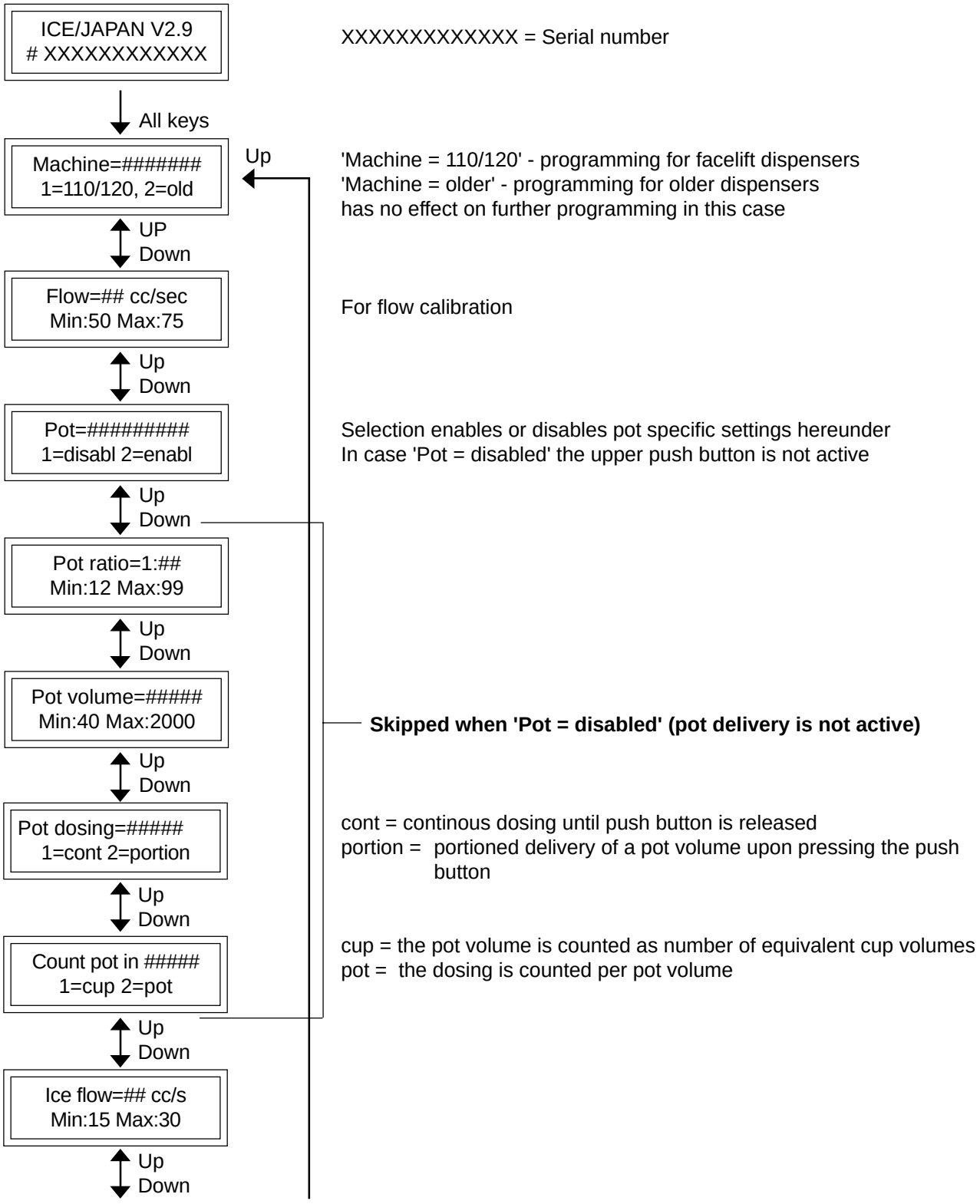
Important setting for sensitivity of empty detection
1 = tea
2 = coffee

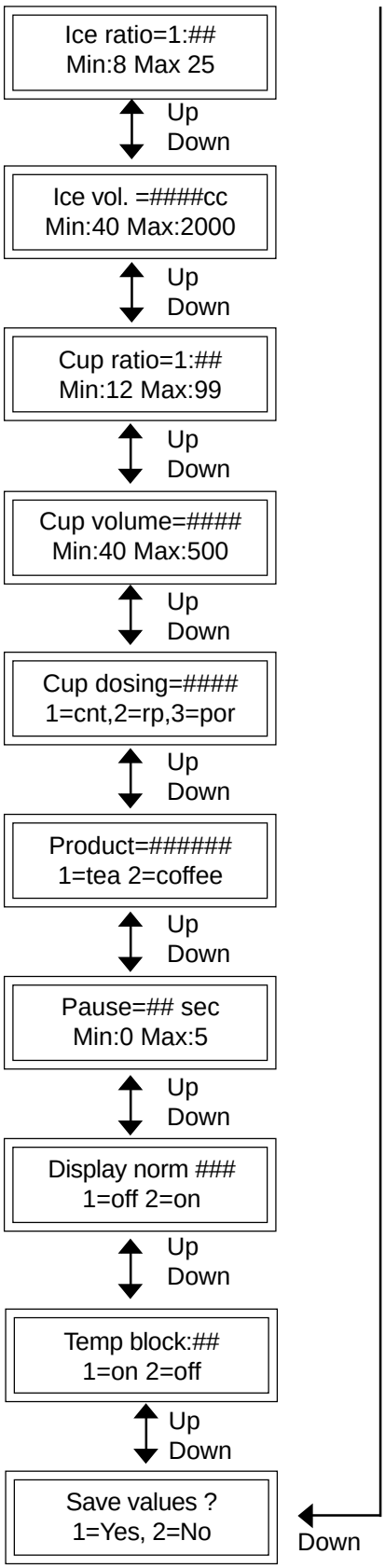
Pause between push button activations

Standard display on
Standard display off

'Temp block : on' –> Dispensing is blocked when boiler temperature < 80°C (176°F)
Default setting = 'Temp block : off'

Cafitesse 110 with Café Cool – **with I2C Espresso interface board installed for Café Cool (both bridges on interface board are closed)**





Concentrate/Water ratio for lower push button

cnt = continuous dosing until the push button is released
rp = delivery of repeated complete cup volumes until the push button is released
por = delivery of a single cup volume upon pressing the push button once

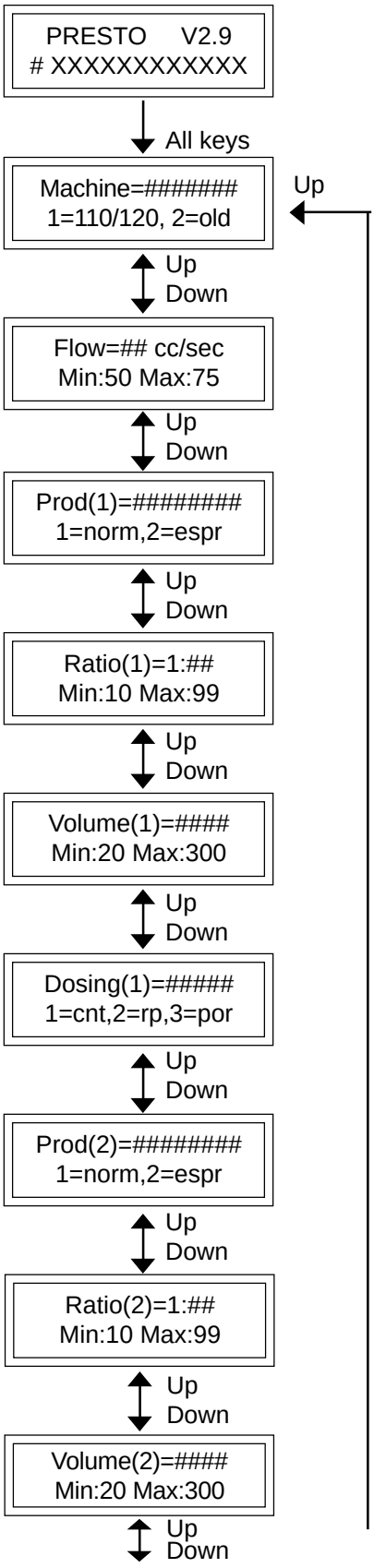
Important setting for sensitivity of empty detection
1 = tea
2 = coffee

Pause between push button activations

Standard display on
Standard display off

'Temp block : on' –> Dispensing is blocked when boiler temperature < 80°C (176°F)
Default setting = 'Temp block : off'

Cafitesse 120 service device Programming Mode – **with I2C Espresso interface board installed (both bridges on interface board are open)**



XXXXXXXXXXX = serial number

'Machine = 110/120' - programming for facelift dispensers
'Machine = older' - programming for dispensers without facelift design
(basically the order of the push buttons 1 and 3 is reversed)

For flow calibration

Skipped when 'Machine = old', as it is always espresso
norm = regular coffee, no mixer motor activated
espr = espresso, mixer motor activated

Ratio setting for upper push button

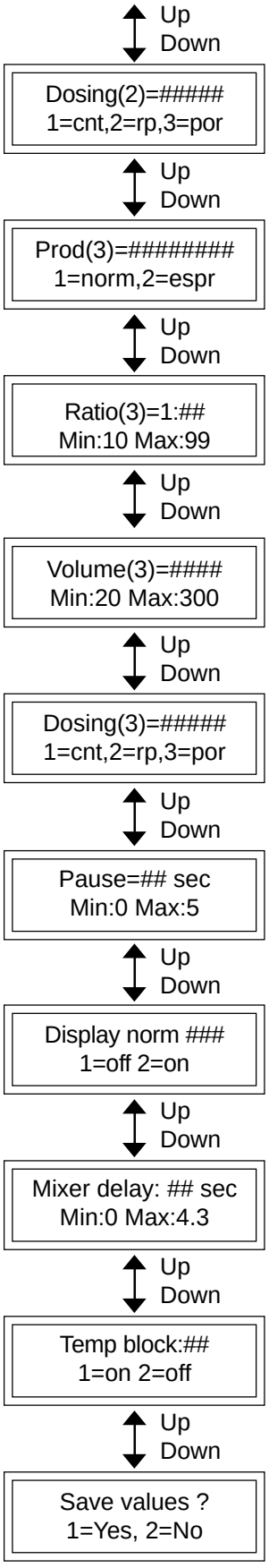
If 'Machine =110/120' and 'Prod.(1) = normal',
then setting range: 'Min:40 Max:2000'

If 'Machine = 110/120' and 'Prod.(1) = normal'
cnt = continuous dosing until the push button is released
rp = delivery of repeated complete cup volumes until the push button is released
por = delivery of a single cup volume upon pressing the push button once

norm = regular coffee, no mixer motor activated
espr = espresso, mixer motor activated

Ratio setting for middle push button

If 'Prod.(2) = normal',
then setting range: 'Min:40 Max:2000'



Only if 'Prod.(2) = normal'
cnt = continuous dosing until the push button is released
rp = delivery of repeated complete cup volumes until the push button is released
por = delivery of a single cup volume upon pressing the push button once

Skipped if 'Machine = 110/120', as it is always espresso
norm = regular coffee, no mixer motor activated
espr = espresso, mixer motor activated

Concentrate/Water ratio for lower push button

If 'Machine = old' and 'Prod.(3) = normal',
then setting range: 'Min:40 Max:2000'

If 'Machine = old' and 'Prod. (3) = normal'
cnt = continuous dosing until the push button is released
rp = delivery of repeated complete cup volumes until the push button is released
por = delivery of a single cup volume upon pressing the push button once

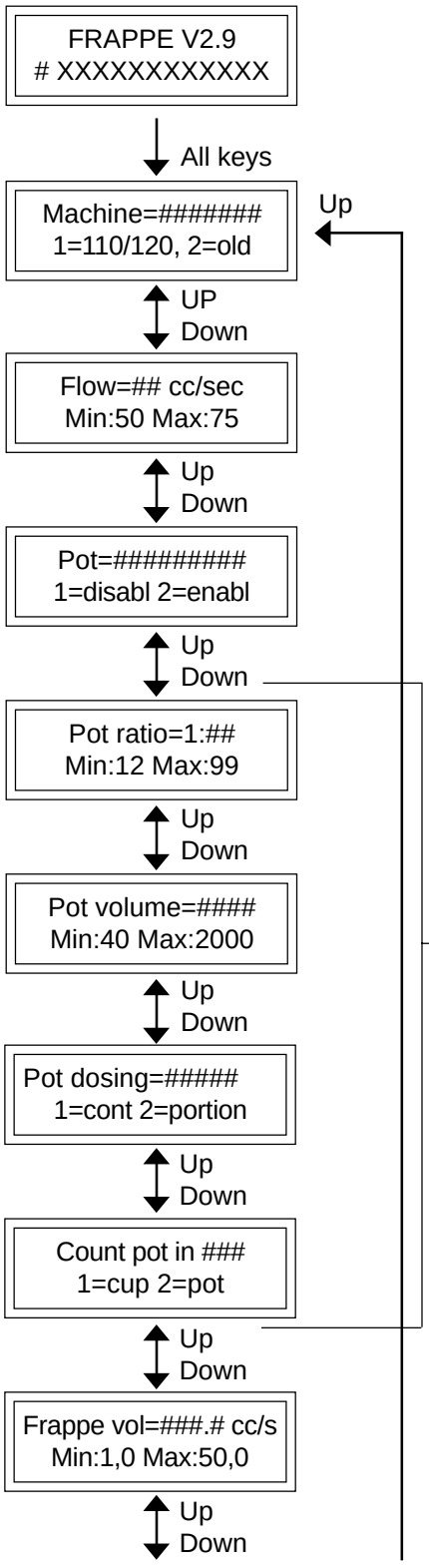
Pause between push button activations
Skipped when all buttons are set to 'espresso'

Standard display off
Standard display on

Time delay between start of dosing and that of the mixer motor

'Temp block : on' –> Dispensing is blocked when boiler temperature < 80°C (176°F)
Default setting = 'Temp block : off'

Cafitesse 110 with FRAPPE – **with I2C Espresso interface board for Frappe (one bridge is open, one is closed)**



When the Frappé interface has been installed successfully, the message display will show:
"FRAPPE V2.9"
XXXXXXXXXXXX = Serial number

'Machine = 110/120' - programming for facelift dispensers
'Machine = older' - programming for older dispensers
has no effect on further programming in this case

For flow calibration

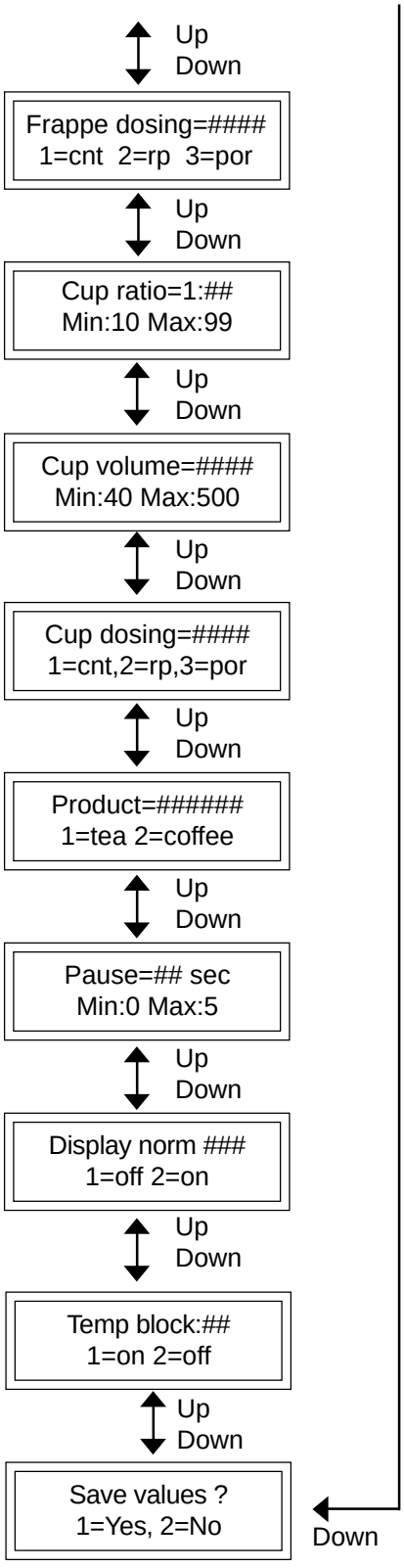
Selection enables or disables pot specific settings hereunder
In case 'Pot = disabled' the upper push button is not active

Skipped when 'Pot = disabled' (pot delivery is not active)

cont = continous dosing until push button is released
portion = portioned delivery of a pot volume upon pressing the push button

cup = the pot volume is counted as number of equivalent cup volumes
pot = the dosing is counted per pot volume

Dosing from concentrate without water
WARNING: Frappé must not be used if a mixer motor is installed.



cnt = continuous dosing until the push button is released
rp = delivery of repeated complete frappe volumes until the push button is released
por = delivery of a single frappe volume upon pressing the push button once

Concentrate/Water ratio for lower push button

cnt = continuous dosing until the push button is released
rp = delivery of repeated complete cup volumes until the push button is released
por = delivery of a single cup volume upon pressing the push button once

Important setting for sensitivity of empty detection
1 = tea
2 = coffee

Pause between push button activations

Standard display on
Standard display off

'Temp block : on' –> Dispensing is blocked when boiler temperature < 80°C (176°F)
Default setting = 'Temp block : off'

4.1.2 Programming Description

- The dispenser types Cafitesse 110/120 and café cool are equipped with the same EPROM (Software). The software automatically identifies the dispenser type and indicates it in the service device.

- For the different dispenser types, the relevant part of software will be loaded automatically.

- If the pot delivery button is deactivated, settings regarding pot delivery will not be effective.

- Programming steps for setting espresso, café cool or coffee concentrate (Frappé) are only valid for the corresponding dispenser types. The settings do not affect other dispenser types.

- The software can be programmed for dispensers
  either
  - with facelift design
  or
  - without facelift design.

- If the software is set to "machine =110/120" (with facelift design), buttons 1 and 2 of Cafitesse 120 dispenser can be programmed for espresso or normal delivery. Button 3 is always set to espresso.

- If the software is set to "machine=old" (without facelift design), buttons 2 and 3 of Cafitesse 120 dispenser can be programmed for espresso or normal delivery. Button 1 is always set to espresso.

- The settings of the counting and indicating modes do not affect dispensers without counters.

- Ratios for cups and pots can be set individually.

The delivery mode setting (portion, continuous, repeated) of the café cool button depends on the setting of the cup button.

- Coin modules and card readers can be connected with one- and two-price lines.

- Before programming dispensers which are equipped for the delivery of espresso, café cool or coffee concentrate (Frappé), observe that the bridges (**1**, Fig. 1) on the I^2C interface board espresso/café cool must be
  - both opened for the delivery of espresso.
  - both closed for the delivery of café cool.
  - one open and one closed for the delivery of coffee concentrate.

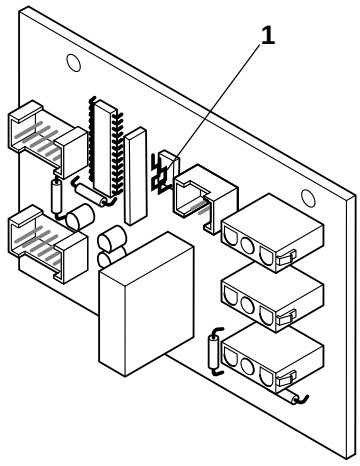


Fig. 1

The service device 2

CAUTION: The service device is equipped with a 9V alkaline block battery. There is a danger of an explosion due to mishandling. The battery may not be recharged, disassembled, short-circuited, burnt or exposed to temperatures above 100 °C or water. Replace it only with a battery of the same type. Spent batteries must be disposed of properly.

- The service device (Fig. 1)

- serves to set the microprocessor control,
- supports fault finding,
- can only prompt data that are stored in the control system
- is delivered with an adapter for connection to the dispenser,
- is equipped with a clock.

- Functions of the service device:

Display

(2 lines, 16 digits each) serves to display all information regarding the software.

- Numeric buttons that are used to enter new values (data)

Clear / to erase an entered value

Input / to store an entered value

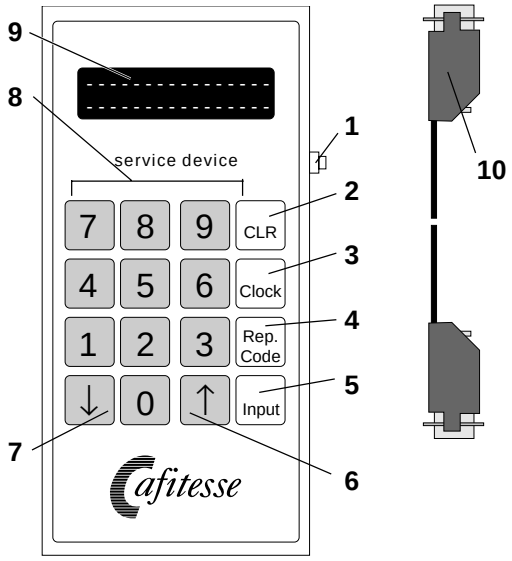
Repair code button
- no function -

Up / to return to previous programming step

Down / to move to the next programming step

The clock of the service device must be set prior to using it. The display happens in the am/pm system, that means
13:00 hours = 1 pm.

service device 2:



Legend:

1 Activating button
2 Clear button
3 Time
4 Repair code button (not in use)
5 Input button
6 Up button
7 Down button
8 Numeric keys
9 Display
10 Service device adapter CFT (9 pole)

Fig. 1

Setting the clock of the service device

- To switch on the service device, press the activating button.

Display on service device: **service device 2 V1.4(15-04-88)**

Clock — Press "Clock".

Display on service device: **Date(m-d):07-21 Time(h-m):03-12a**

Input — Press "Input".

Display on service device: **Set day:21** - - - - - - - - - - - - - -

- Enter the correct day via numeric keys.

Input — Press "Input".

Display on service device: **Set month:07** - - - - - - - - - - - - - -

- Enter the correct month.

Input — Press "Input".

Display on service device: **Set hour:03a** - - - - - - - - - - - - - -

- Enter the correct hour (e.g. 05).

Input — Press "Input".

Display on service device: **Set hour:05a** - - - - - - - - - - - - - -
(e.g. a = a.m. flashes)

↑ — Press the Up button to change to p (pm) or a (am).

Input — Press "Input".

Display on service device: **Set minute:12** - - - - - - - - - - - - - -

- Enter the correct minute.

Input — Press "Input" repeatedly to check or correct the data.

- The entered data are displayed consecutively.

Clock — Press "Clock" to store the data and to switch off the service device.

Calling up date and time:

- Press the activating button to switch on the service device.

Clock — Press "Clock".

Display on service device: **Date(m-d):07-21 Time(h-m):03-11p**

Clock — Press "Clock".

- The service device is switched off.

General Information

- The service device must be equipped with the E-Eprom Version 1.4 or higher.
- If no button is pressed for approx. 30 sec., the service device switches off automatically.
- Instead of the display:

service device 2 V1.4(15-04-88)

the following malfunctions could be indicated:

service device 2 -Low battery-

Replace the battery by a new 9V Alkaline block battery.

CAUTION: Observe all safety instructions given at the beginning of this chapter.

Activating the programming mode

- Remove the push button cover towards the front by means of the dismounting tool.
- Connect the Cafitesse programming adapter to the service device and plug it into the jack behind the upper push button on the dispenser. (**1**, Fig. 1)

A packet of concentrate is not required to be in the machine during programming.

- Switch on the dispenser and press the activating button on the service device.
- Switch off the dispenser.

  After a few seconds:

  Display on service device: **SATELLITE V2.9 #123456789012**

- The dispenser is equipped with EPROM Version 2.9.
- The dispenser is now in the programming mode.
- If there is no further programming, the service device exits the programming mode after approx. 25 sec.

  Display on service device: **- ERROR - Values not saved**

- To continue programming, switch on the dispenser again.

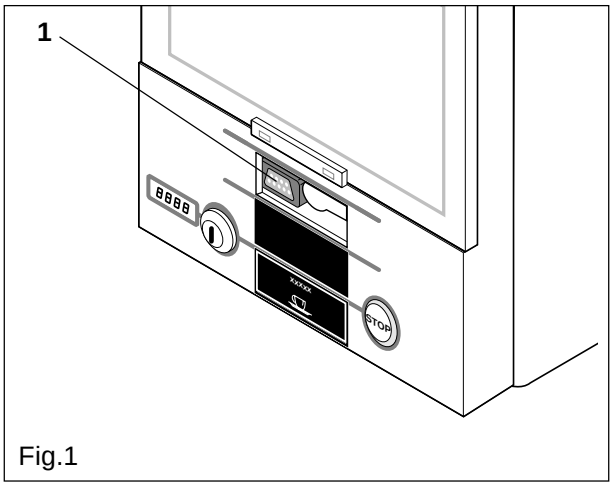


Fig.1

Programming of Cafitesse 110

- Activate the programming mode.

  SATELLITE V2.9
  #123456789012

- Press any button on the service device to start the first programme step.

Setting
New dispenser (Facelift) / old dispenser

Machine=110/120
1=110/120,2=old

- Standard setting 1 corresponds with dispenser type Cafitesse 110/120 (facelift).

  To select "Machine=old", press button 2.

Water flow boiler outlet

Input or ↓

Flow = 75cc/sec
Min:50 Max:75

- The water flow can now be changed, but should be set to 75 cc/sec.

- To change the value:

  CLR Press "CLR" and enter the new value via numeric keys.

Acitvating pot delivery (1)

Input or ↓

Pot=enabled
1=disabl, 2=enabl

- For pot delivery (Fig. 1):
  Press button 1 to select Pot "disabled".

Beverage strength for pots
(only when pot delivery is activated)

Input or ↓

Pot ratio=1:20
Min:12 Max:99

- The beverage strength can now be changed (see above).

Cafitesse 110 (Pot delivery)

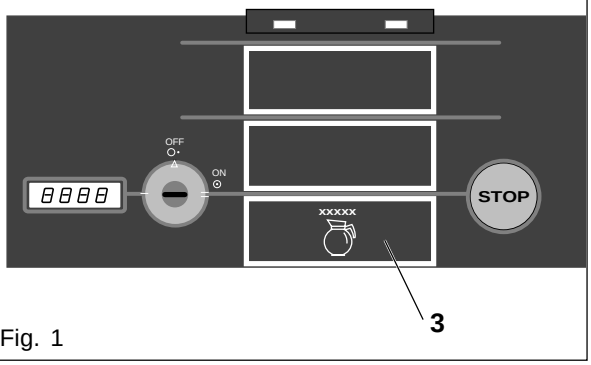


Fig. 1

Cafitesse 110 (Cup/pot delivery)

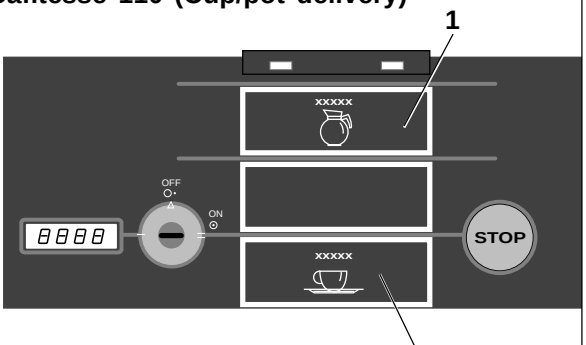


Fig. 2

Cafitesse 110 (version café cool)

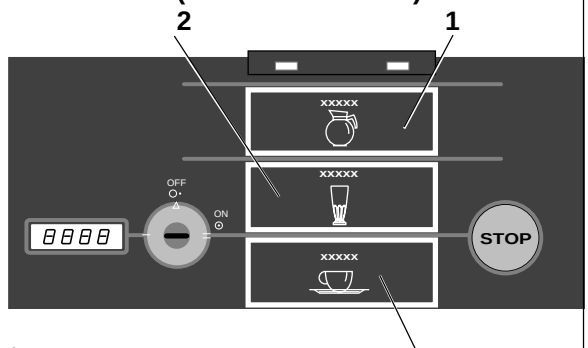


Fig. 3

Cafitesse 120

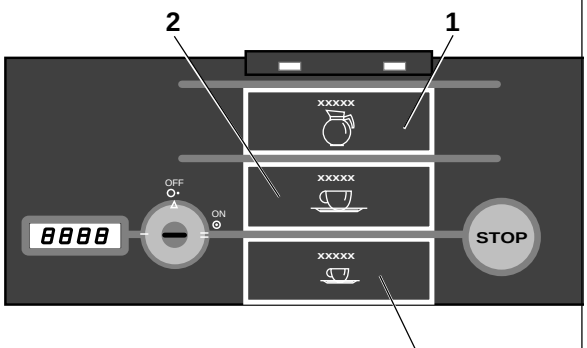


Fig. 4

Pot volume
(only when pot delivery is activated)

Input or ↓

Pot volume=1500cc
Min=40 Max:2000

- The pot volume can now be changed (see above).

Pot delivery mode
(only when pot delivery is activated)

Input or ↓

Pot dosing =port
1=cont, 2=portion

Delivery modes for pot delivery:
Pot dosing=cont. (continuous)
Continuous delivery as long as the pot delivery button is pressed.
Pot dosing=port. (portion)
With each push of the pot delivery button a portion is delivered (refer to pot volume).

- Press button 1 to change to continuous mode.

- Press button 2 to select the delivery of portions.

Counting mode
(only when pot delivery is activated)

Input or ↓

Count pot in cup
1=cup 2=pot

Counting modes for pot delivery:
"Count pot in cup" (pots are counted in cups)
When pots are delivered, the counter registers the number of cups per pot.
"Count pot in pot" (pots are counted)
The counter registers the pots delivered.

- Press button 2 to select counting mode "Count pot in pot".

- Press button 1 to select mode "Count pot in cup".

Programming steps for 'Frappé'

Frappé volume

Input or ↓

Frappe vol=###.cc/s
Min: 1,0 Max: 50,0

- The delivery volume of coffee concentrate without water can now be changed.

Frappé delivery mode

Input or ↓

Frappe dosing=####
1=cnt 2=rp 3=por

Delivery mode
'Frappé' dosing = cont. (continuous)
Continuous delivery as long as the cup delivery button is pressed.
'Frappé' dosing=rep. (repeated)
Repeated delivery of the cup volume as long as the corresponding delivery button is pressed.
'Frappé' dosing=port. (portion)
With each push of the delivery button, a portion is delivered.

- Press "1" to select "Frappé dosing = cont.".

- Press "2" to select "Frappé dosing = rep.".

- Press "3" to select "Frappé dosing = port."

Programming steps for café cool

Water flow café cool (2)
(only with option café cool)

Input or ↓

Ice flow=20cc/s
Min=15 Max:30

- The water flow can now be changed (see above).

Beverage strength café cool
(only with option café cool)

Input or ↓

Ice ratio 1:14
Min=8 Max:25

- The beverage strength can now be changed (see above).

Café cool volume
(only with option café cool)

Input or ↓

Ice vol=0130cc
Min=40 Max:2000

- The café cool volume can now be changed (see above).
- The volume indicates the actual portion size.

Beverage strength for cup delivery (3)

Input or ↓

Cup ratio=1:20
Min=12 Max:99

- The beverage strength can now be changed (see above).
- When the dispenser is only equipped for pot delivery, skip the settings for cup delivery (3x Input or ↓).

Cup delivery volume

Input or ↓

Cup Volume=0150cc
Min:40 Max:500

- The volume for cup delivery (portion size) can now be changed (see above).

Cup delivery mode

Input or ↓

Cup dosing=port.
1=cnt, 2=rp, 3=por

Delivery mode
Cup dosing = cont. (continuous)
Continuous delivery as long as the cup delivery button is pressed.
Cup dosing=rep. (repeated)
Repeated delivery of the cup volume as long as the corresponding delivery button is pressed.
Cup dosing=port. (portion)
With each push of the delivery button, a portion is delivered.

- Press "1" to select "Cup dosing = cont.".
- Press "2" to select "Cup dosing = rep.".
- Press "3" to select "Cup dosing = port."

Product selection

Input or ↓

Product=Coffee
1=tea, 2=coffee

- Flexy-packs with concentrated coffee or tea can be inserted.
- Press "1" to select product = tea
- Press "2" to select product = coffee (factory setting = coffee)

Pause between cup portions

Input or ↓

Pause=01sec
Min:0 Max:5

- The setting for the pause can now be changed (see above).

Counter display mode

Input or ↓

Display norm on
1=off 2=on

Display mode:
Display norm on:
The display is switched on during dispenser operation.
Display indicates total amount of deliveries via cup delivery button (110), or espresso delivery button (120).
Display norm off:
The display is switched off, but the counter is active.

Blocking of the beverage delivery at low temperature

Input or ↓

Temp block:##
1 = on 2 = off

The setting of **"Temp. block:on"** causes the block of beverage deliveries as soon as the water temperature in the boiler is < 80 °C (176 °F).
At the same temperature the yellow LED starts flashing (long flash frequency).

If the water temperature in the boiler drops below 80°C (176°F) during a beverage delivery, the dosing will be continued until the set delivery volume is dispensed (delivery mode = portioned) or until the push button is released (delivery mode = continuous).

The default setting is **'Temp block: off'**, i.e. the blocking of the beverage delivery at low temperature is **not** activated.

Storing Values

Input or ↓

Save values ?
1 = yes 2 = no

- Press "1" to save all programmed values:

Values saved
SAT ready to use

Disconnect the service device and switch on the dispenser

-or-

- Press "2" to cancel (previously programmed data remain valid):

Values not saved
SAT ready to use

If the programming procedure is cancelled or stopped, the dispenser will be ready for operation 25 seconds after switching on, while previously programmed data remain valid.

Product settings for Cafitesse 120

- The settings of the following programme steps are identical to those for Cafitesse 110 Facelift:

Machine=110/120
1=110/120,2=old

Flow = 75cc/sec
Min:50 Max:75

Input or ↓

- Product: button 1

Prod (1) =normal
1=norm, 2=espr.

Product selection

- Press "2" to select espresso.
- Press "1" to select coffee.

Beverage strength

Input or ↓

Ratio(1)=1:20
Min:10 Max:99

- The beverage strength can now be changed (see above).

Volume

Input or ↓

Volume(1)=1500
Min:40 Max:2000

The volume can now be changed (see above).

- The programming options for prod (1) = espresso are: Min:20 – Max:300

Delivery mode

Input or ↓

Dosing(1)=port.
1=cnt, 2=rp, 3=por

Delivery modes

Cup dosing = cont. (continuous)
Cup dosing = rep. (repeated)
Cup dosing = port (portion)

- Press "1" to select continuous delivery mode.
- Press "2" to select repeated delivery mode.
- Press "3" to select portion delivery mode.
- Prod (1)=espresso only allows "portioned" delivery mode
- Product: button 2

Input or ↓

Prod(2)=normal
1=norm, 2=espr.

- All settings are identical to those of button 1.
- Product: button 3 - espresso

Beverage strength

Input or ↓

Ratio (3)=1:12
Min:10 Max:99

- The beverage strength can now be changed (see above).

Volume

Input or ↓

Volume(3)=80
Min:20 Max:300

The volume can now be changed (see above).

- The setting of the following programme steps are identical to those for Cafitesse 110 Facelift.

Pause=01sec
Min:0 Max:5

Display norm on
1=off 2=on

Variable mixer delay

Input or ↓

Mixer delay:## sec
Min:0 Max:4.3

The 'Mixer delay' can be adjusted between Min:0 and Max:4.3 sec. in steps of 0.1 sec.
The adjustment of the 'Mixer delay' causes a time delay between the start of dosing and that of the mixer motor.

- The setting of the following programme steps are identical to those for Cafitesse 110 Facelift.

Temp block:##
1 = on 2 = off

Save values ?
1 = yes 2 = no

General settings Cafitesse 110/120

Display	Standard settings	Possible settings
Machine (CFT 100 F/ CFT 100)	1 = 110/120	1 = 110/120, 2 = old
Flow (water flow)	75 cc/sec	50 cc/sec - 75 cc/sec
Product* (delivered beverage)	2 = coffee	1 = tea 2 = coffee
Pause** (interval between portioned beverage deliveries)	1 sec	00 sec - 05 sec
Mixer delay *** (Zeitverzögerung zwischen Start der Dosierung und Einsetzen des Mixermotors)	0 sec	0 sec - 4,3 sec
Temp block (Blocking of the beverage delivery at low temperature)	2 = off	1 = on 2 = off
Display norm (counter display)	2 = on	1 = off 2 = on

* only with Cafitesse 110 / Cafitesse 110 Facelift.
** This setting is not available for espresso delivery with Cafitesse 120.
If all buttons are set to espresso delivery, this programme step will be skipped.
Factory setting = 6 sec. pause.
*** only with Cafitesse 120 / Cafitesse 120 Facelift.

Programming the buttons Cafitesse 110/120 Facelift

Defaults	Possible settings CFT 110 F	Button	Factory settings CFT 120 F	Possible settings CFT 120 F
Pot = enabled	1 = disabled 2 = enabled		Prod(1) = normal (coffee)	1=norm. (coffee),2=espresso
Ratio = 1:20	1:12 - 1:99		Ratio(1) = 1:20	1:10 – 1:99 (normal) 1:10 – 1:99 (espresso)
Volume = 1500cc	40cc – 2000cc	**Button 1**	Volume(1) = 1500cc	40cc – 2000cc (normal) 20cc – 300cc (espresso)
Pot dosing = port.	1 = cont. , 2 = portion		Dosing(1) = port.	1 = cont., 2 = rep., 3 = port.
Count pot in cup	1 = cup , 2 = pot			–
for café cool: Ice flow = 20cc/sec. Ice ratio = 1:14 Ice volume = 130cc	15cc/sec. – 30cc/sec. 1:8 – 1:25 40cc – 2000cc	**Button 2**	Prod.(2) = normal (coffee) Ratio(2) = 1:20	1=norm. (coffee),2=espresso 1:10 – 1:99 (normal) 1:10 – 1:99 (espresso)
for Frappé (delivery of coffee concentrate):			Volume(2) = 150cc	40cc – 2000cc (normal) 20cc – 300cc (espresso)
Frappé vol=###.#cc/s Frappé dosing=###	1.0-50,0 cc/sec 1=cont., 2=rep., 3=port.		Dosing(2) = port.	1 = cont., 2 = rep., 3 = port. –
Cup ratio = 1:20	1:12 – 1:99	**Button 3**	Ratio (3) = 1:12	1:10 – 1:99
Cup volume = 150cc	40cc – 500cc		Volume (3) = 80cc	20cc – 300cc
Cup dosing = port.	1 = cont. 2 = rep 3 = port.		–	–

4.2 Programming for the Customer

4.2.1 Reading and Resetting the Counters for Cafitesse 120

Cafitesse 110

Position OFF	=	delivery disabled, buttons locked
Position ON	=	delivery enabled
Position 0000	=	allows counter reset

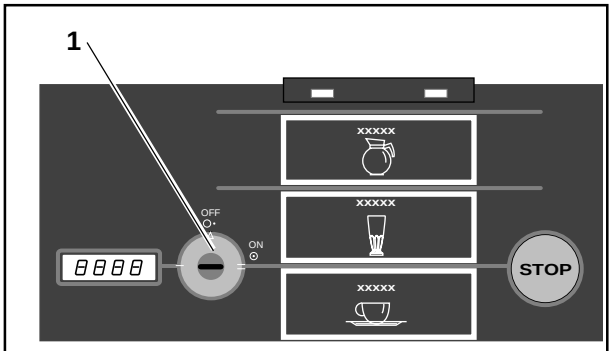


Fig. 1 (Cafitesse 110)

1.) Display Mode ON
(to be set by service technician)

- The display is switched on and always indicates the number of delivered cups.
- Turn the key switch (**1**) to position OFF. (Fig.1)
- To read the number of delivered portions for café cool (option café cool), activate the café cool button.
- To read the number or delivered pots, press the STOP button.

2.) Display Mode OFF
(to be set by service technician)

- The display is off during delivery, however, the counter registers the number of deliveries.
- Turn the key switch (**1**) to position OFF. (Fig.1)
- Switch off the main switch, wait approx. 5-6 sec., and switch it on again.
- The display is switched on for max. 10 sec.
- The display indicates the counter value for delivered cups.
- To display the number of delivered café cool portions, press the café cool button.
- To display the number of delivered pots, press the STOP button.
- In case that not all values could be read in time. the procedure must be repeated.
- Resetting the counter:
  Cup delivery:
  Turn the key switch to position "0000".
  Café cool delivery (option café cool):
  Turn the key switch to position "0000" and press the café cool button.
  Pot delivery:
  Turn the key switch to position "0000" and press the STOP button.

Reading and resetting the counters for Cafitesse 120

Position OFF = delivery disabled, button locked

Position ON = delivery enabled

Position 0000 = allows counter reset

The counter registers the respective number of button activations.

(**1**) ESPRESSO (cup) or COFFEE (cup or pot)

(**2**) ESPRESSO (cup) or COFFEE (cup or pot)

(**3**) ESPRESSO (cup)

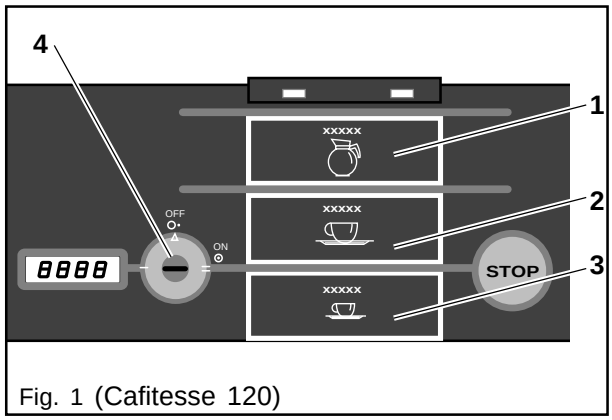


Fig. 1 (Cafitesse 120)

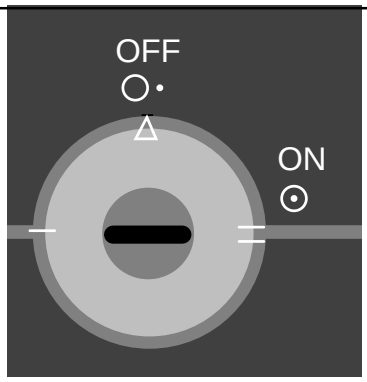


Fig. 2 (Cafitesse 110/120)

1.) Display mode ON
(to be set by the service technician)s

- The display is switched on and always indicates the number of delivered espresso cups (button 3).
- Turn the key switch (**4**) to position OFF. (Fig. 1)
- To read the number of deliveries for button (**1**), press the STOP button. (Fig. 1)
- To read the number of deliveries for button (**2**), press button (**2**). (Fig. 1)

2.) Display mode Off
(to be set by the service technician)

- The display is switched off during delivery, however, the counter registers the number of deliveries.
- Turn the key switch (**4**) to OFF. (Fig. 1)
- Switch off the main switch, wait approx. 5-6 sec., and switch it on again.
- The display is switched on for max. 10 sec.
- The display indicates the counter value for delivered espresso cups.
- To read the number of deliveries for button (**2**), press button (**2**). (Fig. 1)
- To read the number of deliveries for button (**1**), press the STOP button. (Fig. 1)
- In case that not all values could be read in time, the procedure must be repeated.
- Resetting the counter:
  Espresso delivery:
  Turn the key switch to position "0000".
  Deliveries for button (**2**):
  Turn the key switch to position "0000" and press button (**2**).
  Deliveries for button (**1**):
  Turn the key switch to position "0000" and press the STOP button.

4.3 Reading further Data

Not included

Contents

Functions 5

Total Overview - Components of the Dispenser ***5.1***

General Safety Instructions ***5.2***

Water System ***A***

Adjustments ***A.1***

Disassemblies ***A.2***
General Remarks A.2.0
Disassembly of the Inlet Valve A.2.1
Disassembly of the Outlet Valve A.2.2
Disassembly of the Boiler Cover A.2.3
Disassembly of the Boiler A.2.4
Disassembly of the Hot Water Outlet Tap A.2.5

Functional Descriptions ***A.3***
Total Overview - Water System A.3.1
Function: Inlet Valve A.3.2
Function: Boiler A.3.3
Function: Water Inlet into the Boiler A.3.4
Function: Heating and Temperature Regulation A.3.5
Function: Water Outlet System and Outlet Valve A.3.6

Electrical Diagrams ***A.4***
Circuit - Water Inlet Valve A.4.1
Circuit - Water Coil A.4.2
Circuit - Heating and Temperature Regulation A.4.3

Technical Specifications ***A.5***

Options ***A.6***
Café Cool A.6.1

Accessories ***A.7***
Tank Top A.7.1
Kit Water Tank A.7.2
Kit Overflow protection A.7.3

Brewing System ***B***
Not required

Dosing System (incl. Components of the Product) ***C***

Adjustments ***C.1***
Not required

Diassemblies ***C.2***
Disassembly of the B2 Coil and the Diode Carrier C.2.1
Disassembly of the Mixer and the Mixer Motor C.2.2

Functional Descriptions ***C.3***
Total Overview of the Dosing System C.3.1
Function: Flexi Dosing System C.3.2
Overview: Flexi-Packs for Cafitesse 110/120 C.3.2.1
Function: Mixer C.3.3

Electrical Diagrams ***C.4***
Circuit of the Concentrate Coil C.4.1

Technical Specifications ***C.5***

Options ***C.6***
Frappé C.6.1

Accessories ***C.7***
Not available

Product Delivery ***D***

Adjustments ***D.1***

Disassemblies ***D.2***
Installation and Disassembly of the Buttons D.2.1
Disassembly of the Pot Carrier and the Main Circuit D.2.2

Functional Descriptions ***D.3***
Total Overview of the Product Delivery D.3.1
Function: Buttons D.3.2
Function: Cup Carrier, Drip Grid and Pot Carrier D.3.3

Electrical Diagrams ***D.4***
Not required

Technical Specifications ***D.5***

Options ***D.6***
Not available

Accessories ***D.7***
Drainage for the Drip Tray D.7.1

Cooling System ***F***

Adjustments ***F.1***
Not required

Disassemblies ***F.2***
Disassembly of the Fan F.2.1
Disassembly of the Cooling Compartment Insulation F.2.2
Disassembly of the Peltier Element F.2.3

Functional Descriptions ***F.3***
Total Overview of the Cooling System F.3.1
Function: Cooling System F.3.2

Electrical Diagrams ***F.4***
Cooling Circuit F.4.1

Technical Specifications ***F.5***

Options ***F.6***
Not available

Accessories ***F.7***
Not available

Housing ***G***

Adjustments ***G.1***
Not required

Disassemblies ***G.2***
Disassembly of the Front Part G.2.1
Disassembly of the Operating Panel G.2.2

Functional Descriptions ***G.3***
Total Overview of the Housing G.3.1

Electrical Diagrams ***G.4***
Not required

Technical Specifications ***G.5***

Options ***G.6***

Accessories ***G.7***
Cover with Heating Plate G.7.1
Key Switch G.7.2

Power Supply and Control ***K***

Adjustments ***K.1***

Disassemblies ***K.2***
Disassembly of the Power Supply K.2.1
Disassembly of the Control K.2.2
Disassembly of the Operating Panel Board K.2.3

Functional Descriptions ***K.3***
Total Overview of the Cable Harnesses K.3.1
Function: Power Supply K.3.2
Function: Control K.3.3
Function: Operating Panel Board K.3.4
Function: I^2C-Bus Extension Board K.3.5

Electrical Diagrams ***K.4***

Technical Specifications ***K.5***

Options ***K.6***
Not available

Accessories ***K.7***
Not available

External Options ***L***

Depending on the different Nationalities, to be completed by the OPCOs and the Distributors

Payment Systems ***P***

Adjustments ***P.1***

Installation ***P.2***
Installation of the Kit 'Coin Module Cafitesse 100/Facelift' P.2.1

Functional Descriptions ***P.3***
Total Overview of the Coin Modules P.3.1
Function: Coin Modules P.3.2

Electrical Diagrams ***P.4***

Technical Specifications ***P.5***

Options ***P.6***
Not available

Accessories ***P.7***
Not available

5.1 Total Overview - Components of the Dispenser

- Legend for fig. 1a (Cafitesse 110):

1 Housing
2 Front part
3 Housing cover
4 Cooling compartment lid
5 Rear wall
6 Control
7 Air duct
8 Fan
9 Fan console
10 Boiler cover
11 Boiler
12 Outlet valve
13 Water outlet tap (Tomlinson handle)
14 Metal air supply channel
15 Shielding cover
16 Drip tray
17 Drip grid
18 Cup carrier
19 Delivery button
20 Operating panel
21 Operating panel board
22 Key switch (option)
23 Counter
24 Socket for programming with the service device
25 Operating panel cover
26 Tension rod
27 Front cover
28 Advertising panel

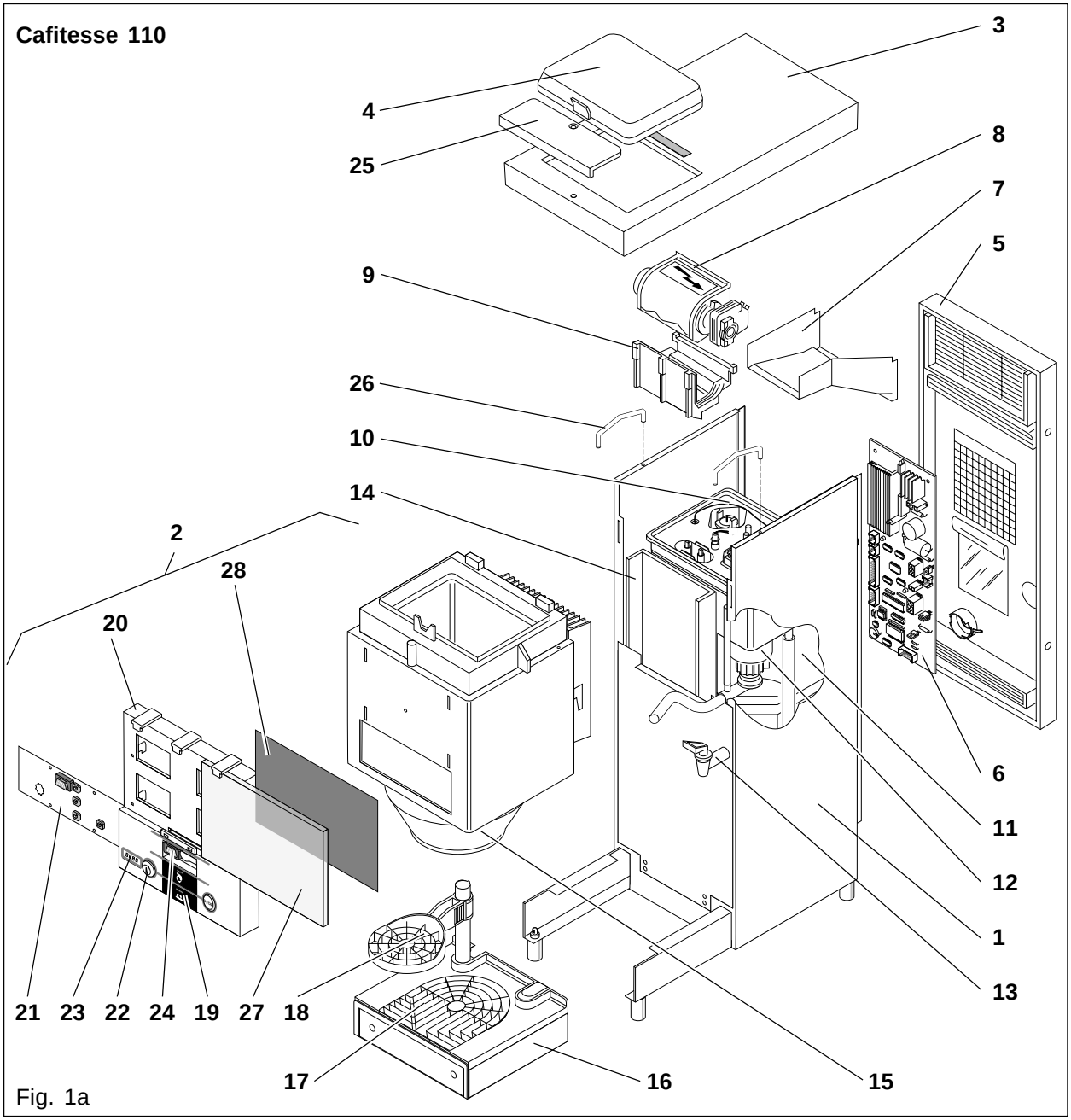


Fig. 1a

- Legend for fig. 1b (Cafitesse 120):

1 Housing
2 Front part
3 Housing cover
4 Cooling compartment lid
5 Rear wall
6 Control
7 Air duct
8 Fan
9 Fan console
10 Boiler cover
11 Boiler
12 Outlet valve
13 Water outlet tap (Tomlinson handle)
14 Metal air supply channel
15 Shielding cover
16 Drip tray
17 Drip grid
18 Cup carrier
19 Delivery buttons
20 Operating panel
21 Operating panel board
22 Key switch (option)
23 Counter
24 Socket for programming with the service device
25 Operating panel cover
26 Tension rod
27 Front cover
28 Advertising panel
29 Mixer motor
30 Mixing funnel
31 Impeller
32 Spacer ring
33 Mixing funnel
34 Sieve housing

Cafitesse 120

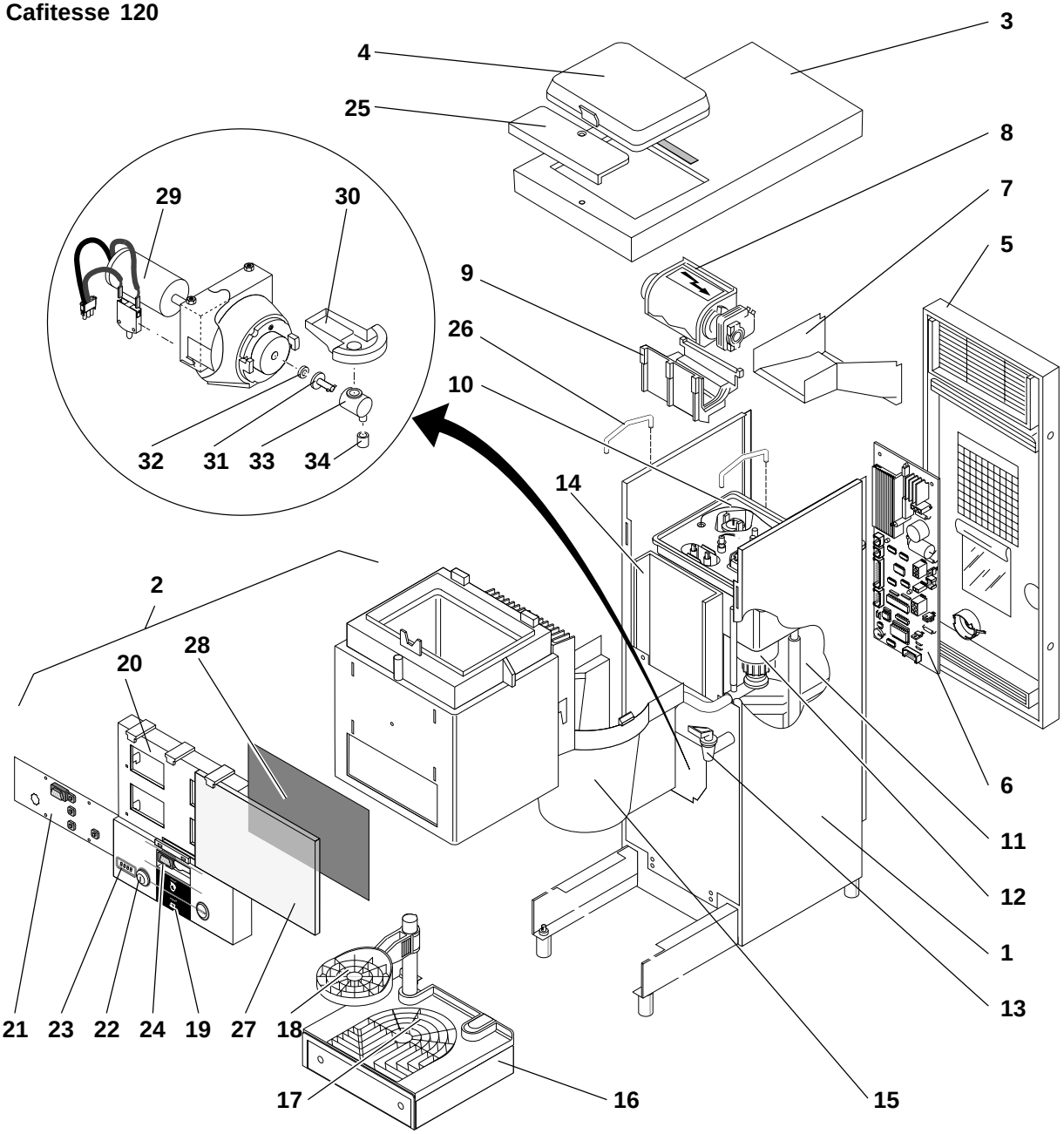


Fig. 1b

5.2 General Safetry Instructions for Ground Connection/ Safety Circuit

DANGER: **The work described in this chapter must only be carried out by trained service technicians.**

DANGER: **Safety devices must not be changed or bridged.**

DANGER: **Before starting the work, disconnect the dispenser from the mains supply and close the water tap.**

DANGER: **When carrying out disassemblies at the boiler, there is the danger of being scalded by hot water (see chap. 'Disassembly of the boiler').**

DANGER: **After the repair work ensure that the overflow tray (1) and the overflow hose (2) are mounted correctly. (Fig. 1)**

DANGER: **When carrying out any kind of work, ensure that the earth connectors are mounted correctly in order to guarantee faultfree ground connection.**

DANGER: **All metal parts must be connected with metal screws. Beneath the screw head there must be a lock washer. Fasten the screws tightly (ground connection).**

WARNING: **The manufacturer cannot be held liable or responsible when other than original spare parts are used for repair work.**

WARNING: **Cable harnesses must not be repaired, but must be replaced completely.**

WARNING: **When the front part has been dismounted in the course of repair processes, make sure that the hose (1) is mounted correctly into the outlet elbow (2) when remounting it. (Fig. 2)**

CAUTION: **In any case, observe the safety instructions of each chapter.**

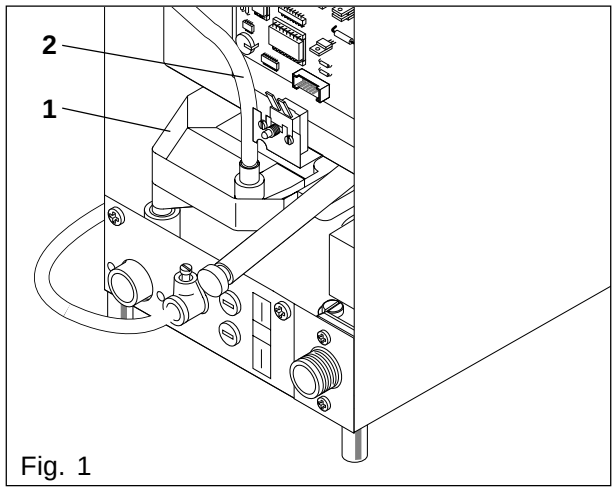


Fig. 1

CAUTION: **When the work has been finished, always carry out a functional test.**

CAUTION: **Make sure that all earthed conductor connections are connected and fastened tightly.**

- Ground connections are located at:
  - the housing cover (1x),
  - the right housing wall, (2x) at the top,
  - the left housing wall at the bottom,
  - the support of the safety thermostat overflow,
  - the thermostat,
  - the fan,
  - the heating element,
  - the dry running protection
  - the power supply console, 2x
  - the plug for the pot carrier switch at the right
  - the plug for heating plate connection at the top.

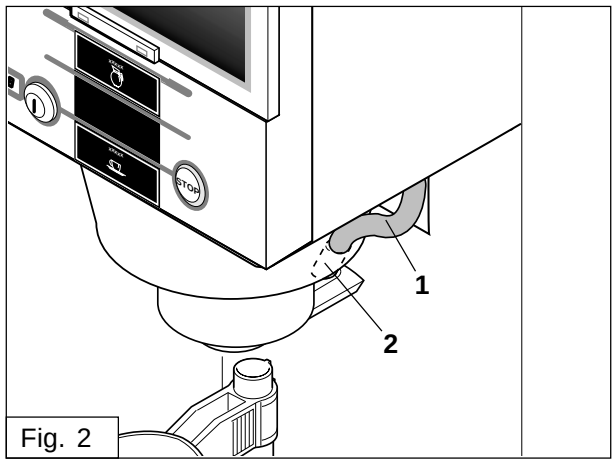


Fig. 2

A Water System

A.1 Adjustments

Thermostat	A capillary tube thermostat filled with liquid (approved by the food industry) in a protective tube switches off when a fault occurs
Adjustment of the thermostat	Standard adjustment up to the stop of the regulator approx. 95 °C (203 °F)
When installing the dispenser at 2000 m over mean sea level	Must be adjusted at the location according to the altitude. Must **not** be set to max. !

A.2 Disassemblies

A.2.0 General Information

Drain water from the boiler

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Loosen the screw (**2**) and remove the operating panel cover (**1**). (Fig. 1)
- Remove the front cover and the advertising panel (**3**) towards the side. (Fig. 1)

CAUTION: When the front cover is made of glass, there is the danger of being injured due to incorrect handling or breaking of the glass.

- Remove the cooling compartment lid (**4**). (Fig. 1)
- Remove the housing cover (**6**). (Fig. 1)
- Remove the air duct (**7**). (Fig. 1)
- Remove the rear housing wall (**5**). (Fig. 1)
- Place the dispenser in such a manner that the rear housing wall is at the edge of the table or counter.
- Position a sufficiently large container underneath it. (10 l bucket)

CAUTION: There is the danger of being scalded by hot water.

CAUTION: Prevent the board from water.

- Withdraw the drainage hose (**8**) of the boiler and place it over the container. (Fig. 2)
- Withdraw the plug (**9**). (Fig. 2)
- Drain the water completely.
- As there may still be water in the drainage hose, place the container underneath the hot water delivery tap.
- Actuate the hot water delivery tap (**10**) and drain the residual water. (Fig. 3)

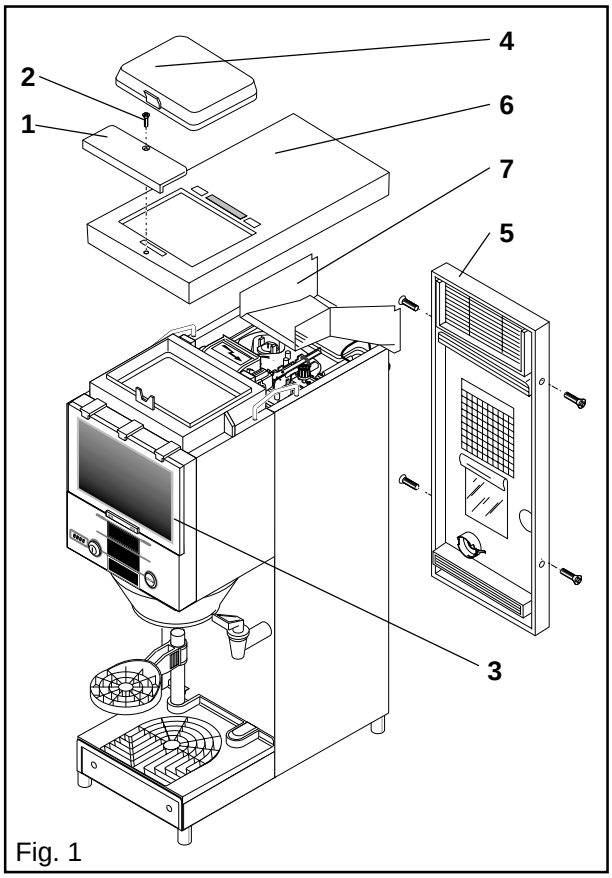


Fig. 1

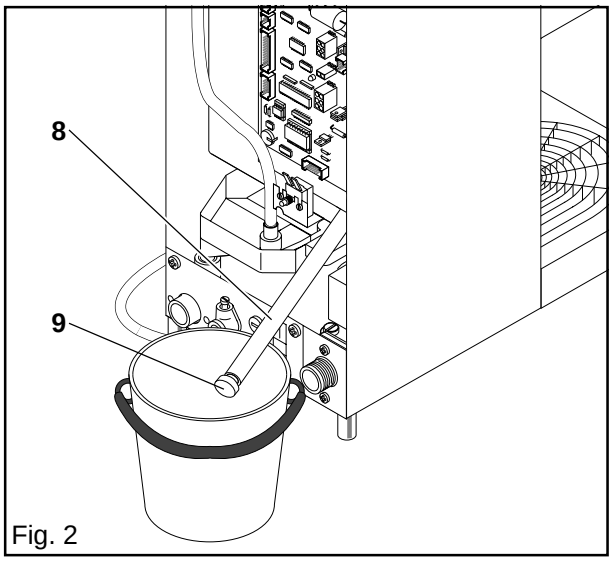


Fig. 2

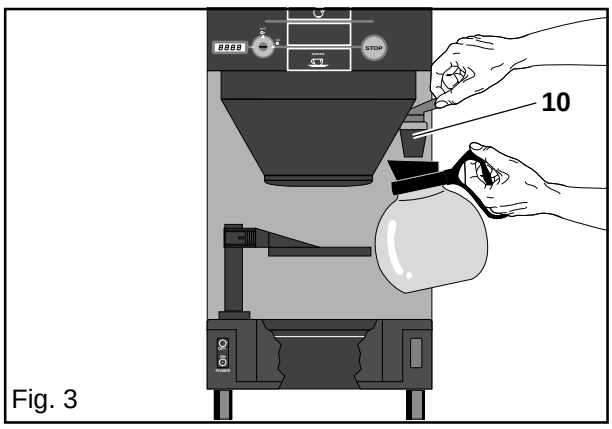


Fig. 3

A.2.1 Disassembly of the Inlet Valve

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Loosen the screw (**2**) and remove the operating panel cover (**1**). (Fig. 1)
- Remove the front cover and the advertising panel (**3**) towards the side. (Fig. 1)

CAUTION: **When the front cover is made of glass, there is the danger of being injured due to incorrect handling or breaking of the glass.**

- Remove the cooling compartment lid (**4**). (Fig. 1)
- Remove the housing cover (**6**). (Fig. 1)
- Remove the air duct (**7**). (Fig. 1)
- Remove the rear housing wall (**5**). (Fig. 1)
- Drain the water from the boiler. (see chap. 5A.2)
- Put the boiler drainage hose (**8**) aside. (Fig. 2)

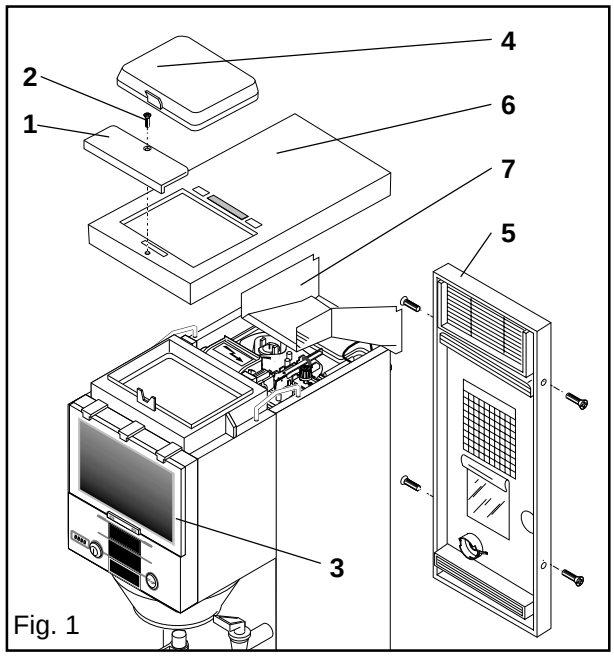


Fig. 1

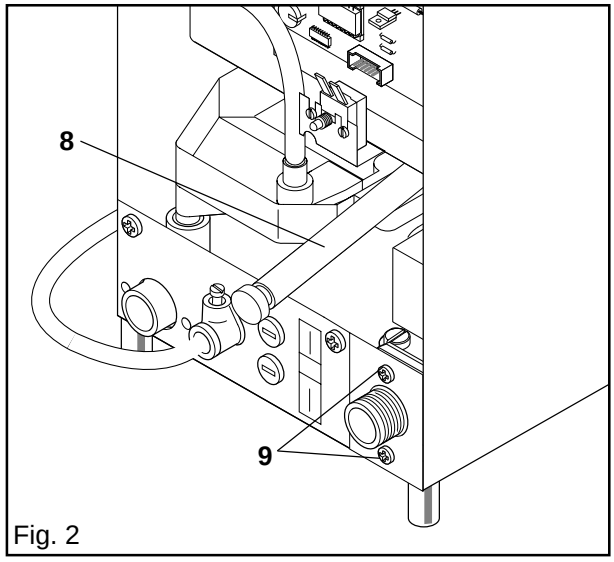


Fig. 2

Disassembly:

- Loosen the screws of the inlet valve (**9**). (Fig. 2)
- Push the inlet valve completely into the dispenser (inlet spout) and remove it towards the top.
- Disconnect the cable harness contacts from the inlet valve (**10**). (Fig. 3)
- Place a cloth underneath the dispenser and make sure that there is no water running out of the valve or inlet hose into the power supply console.
- Loosen the inlet hose (**11**). (Fig. 3)

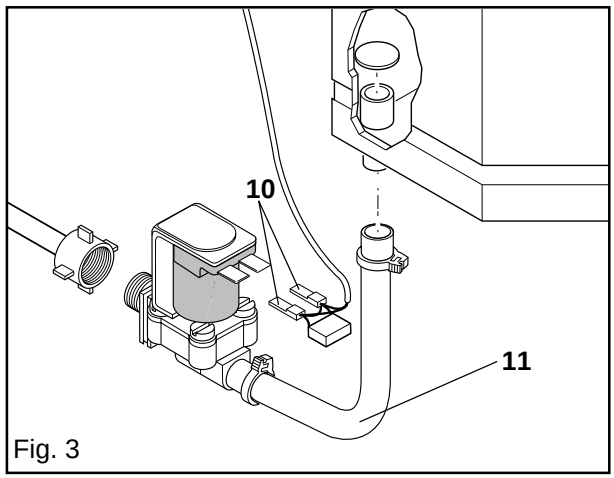


Fig. 3

Assembly:

- Assembly is done in the reverse order.

A.2.2 Disassembly of the Outlet Valve

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Remove the flexi-pack from the cooling compartment.
- Place a sufficiently large container underneath the hot water delivery tap (**1**) and actuate the tap until there is no more water delivered. (Fig. 1)

CAUTION: **There is the danger of being scalded by hot water. Keep parts of the body away from the outlet area.**

- Remove the front part (**2**). (Fig. 2) (see chap. 5G.2)

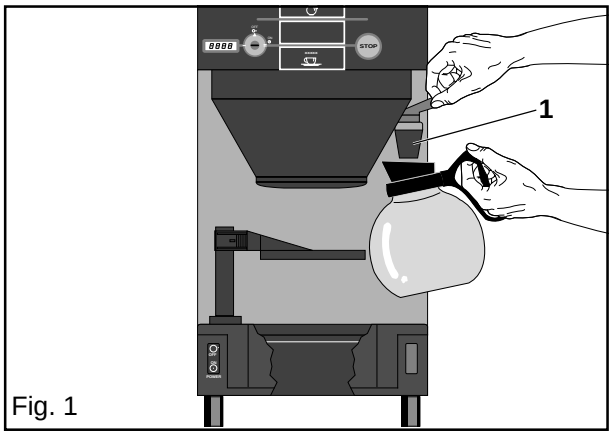


Fig. 1

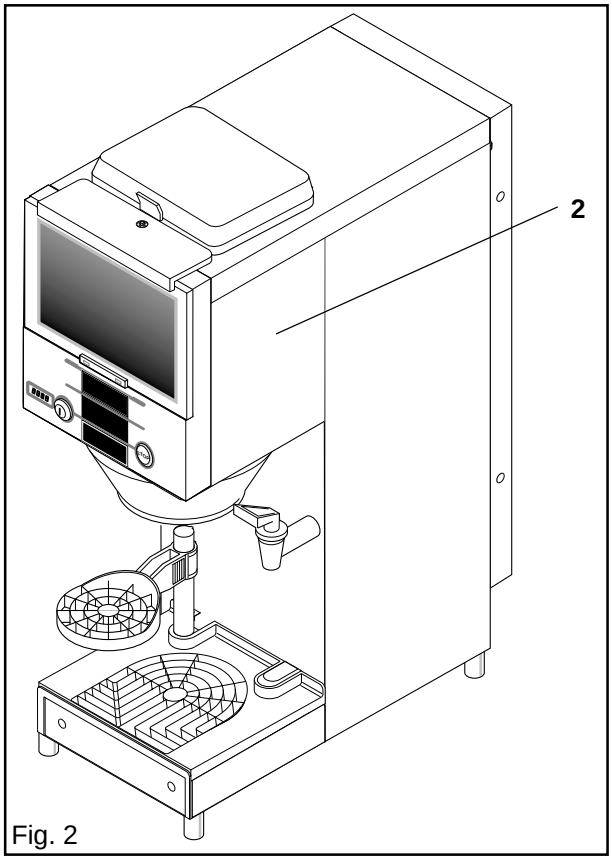


Fig. 2

Disassembly:

CAUTION: Place a cloth underneath the outlet valve in order to prevent water contained in the valve dripping onto the power supply during the disassembly.

- Turn the support ring (**3**) counterclockwise as far as the stop (direction is marked on the ring) and press the outlet elbow (**4**) downwards. (Fig. 3)

CAUTION: Do not overwind the support ring (3)! (Fig. 3)

- Hold the tappet (**5**) by means of a screwdriver in order to prevent it falling into the dispenser and remove it afterwards. (Fig. 3)

CAUTION: Make sure that the distance washer (6) does not get lost. (Fig. 3)

If the water coil shall be dismounted, turn the support ring clockwise and remove it after the disassembly of the outlet elbow.

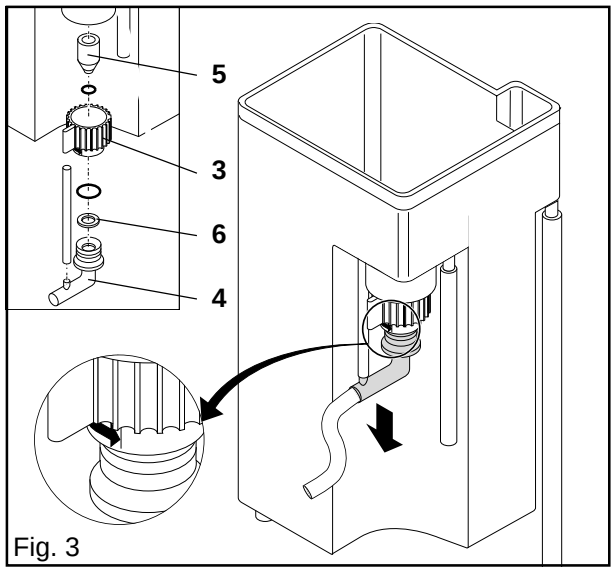


Fig. 3

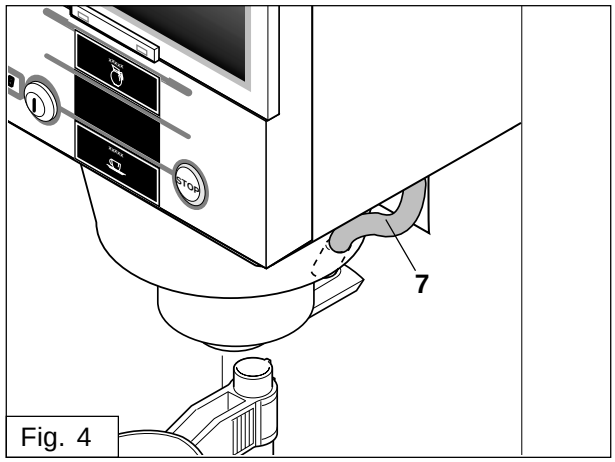


Fig. 4

Assembly:

- Assembly is done in the reverse order.
- For the assembly of the outlet valve, insert the tappet and connect the outlet elbow to the outlet spout. When mounting ensure that the air hose is not bent or blocked. Turn the support ring clockwise as far as the stop in order to lock the outlet elbow.
- When mounting the outlet valve, observe that the outlet elbow reaches as far as the stop inside the boiler outlet spout.

WARNING: When mounting, observe that the hose (7) is inserted correctly into the outlet hose. (Fig. 4)

A.2.3 Disassembly of the Housing Cover

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Loosen the screw (**2**) and remove the operating panel cover (**1**). (Fig. 1)
- Remove the front cover and the advertising panel (**3**) towards the side. (Fig. 1)

CAUTION: **When the front cover is made of glass, there is the danger of being injured due to incorrect handling or breaking of the glass.**

- Remove the cooling compartment lid (**4**). (Fig. 1)
- Remove the housing cover (**6**). (Fig. 1)
- Remove the air duct (**7**). (Fig. 1)
- Remove the rear housing wall (**5**). (Fig. 1)
- Remove the fan (**8**) and the fan console (**9**). (Fig. 1)
- Drain the water from the boiler. (see chap. 5A.2)

CAUTION: **There is the danger of being scalded by hot water. Keep parts of the body away from the outlet area.**

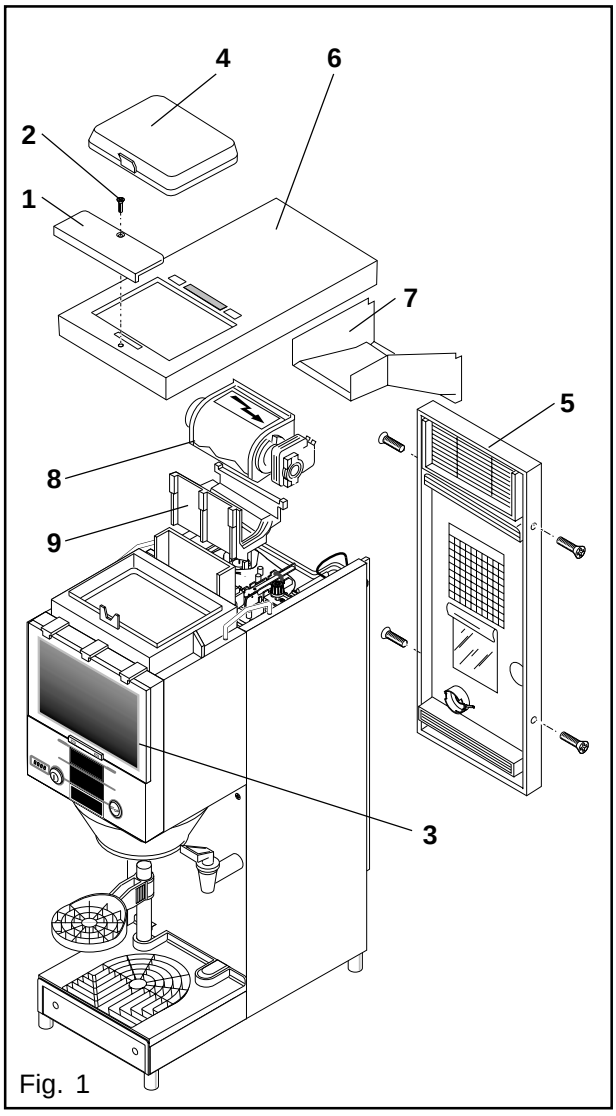


Fig. 1

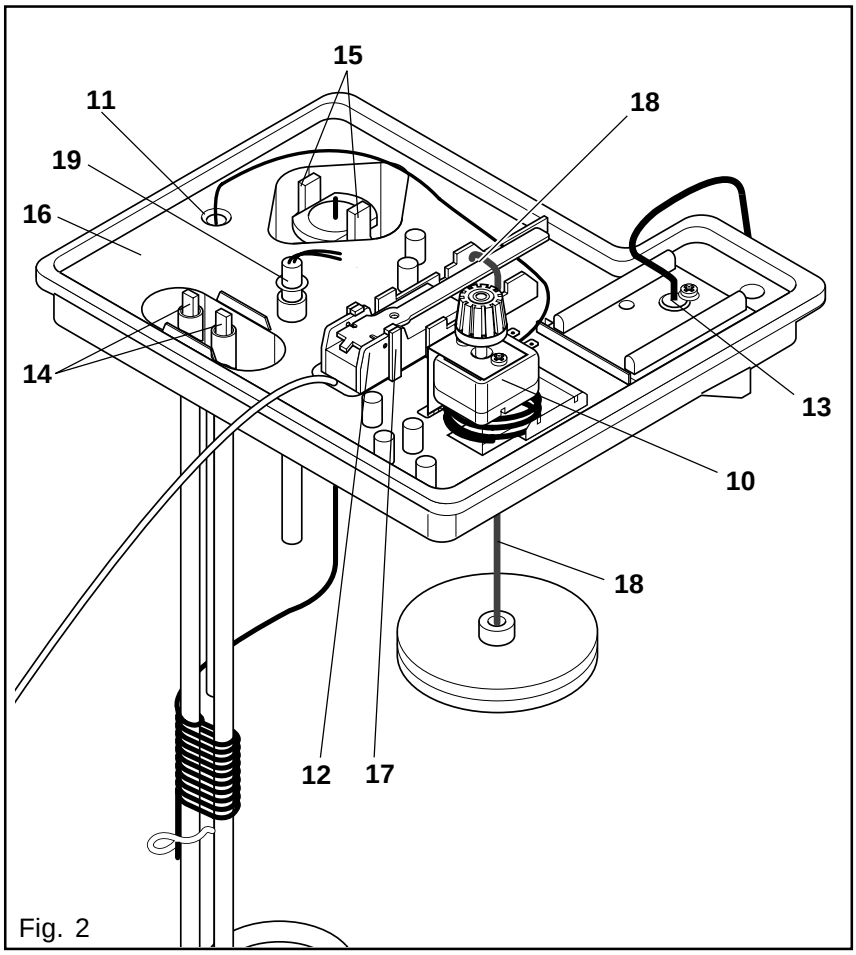


Fig. 2

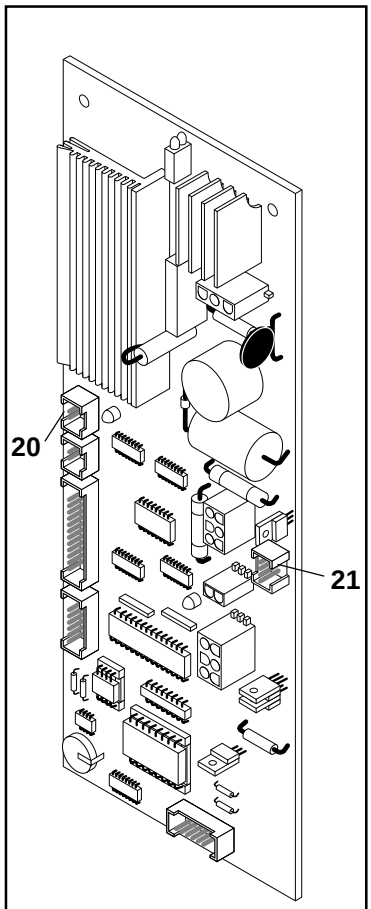


Fig. 3

Disassembly:

- Remove the sensor of the overflow safety thermostat (**13**): Loosen screw and washer and remove the sensor. (Fig. 2)
- Loosen the contacts of the flexi main cable harness at the heating element (**14**) and at the dry running protection (**15**). (Fig. 2)
- Disconnect the cable harness of the low temperature sensor from the control terminal (**20**). (Fig. 3)
- Disconnect the cable harness of the float switch from the control terminal (**21**). (Fig. 3)
- Disconnect the main cable harness contacts from the thermostat (**10**). (Fig. 2)
- Compress the clamping supports of the boiler cover on one side of the housing first and slightly lift the boiler cover.
- Repeat the process on the other side of the housing.
- Remove the boiler cover (**16**). (Fig. 2)

Assembly:

- Assembly is done in the reverse order.

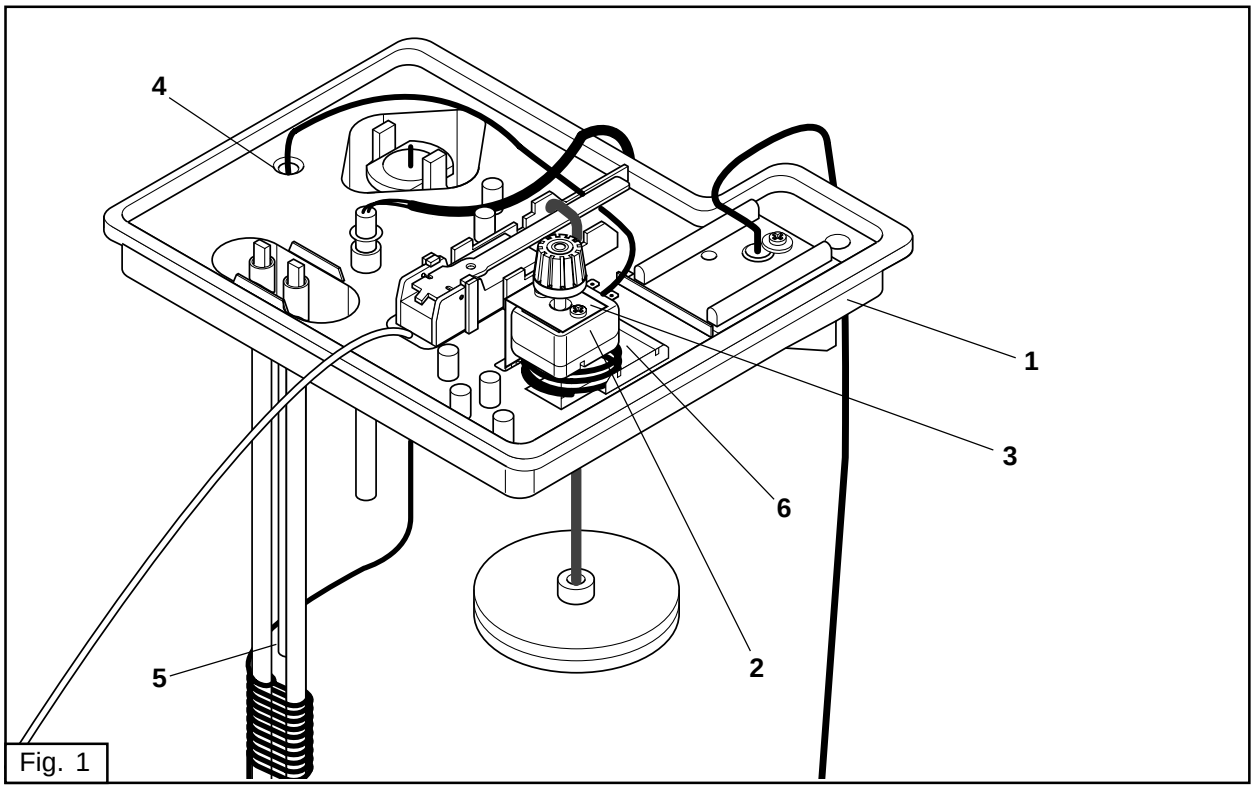


Fig. 1

Thermostat

Disassembly:

- Carry out the preparations for the disassembly of the boiler cover (**1**). (Fig. 1) (refer to the previous page)
- Disconnect the flexi main cable harness contacts from the thermostat (**2**). (Fig. 1)
- Withdraw the thermostat with support (**3**) from the boiler cover. (Fig. 1)
- Withdraw the thermostat sensor (**4**) from the protective tube (**5**). (Fig. 1)

Assembly:

- Assembly is done in the reverse order.
- When mounting the thermostat, wind the sensor wire from the sensor side approx. three or four times.
- Position the wound part of the sensor wire in the recess of the cover (**6**) underneath the thermostat. (Fig. 1)
- Insert the thermostat sensor deep into the protective tube (as far as the stop).

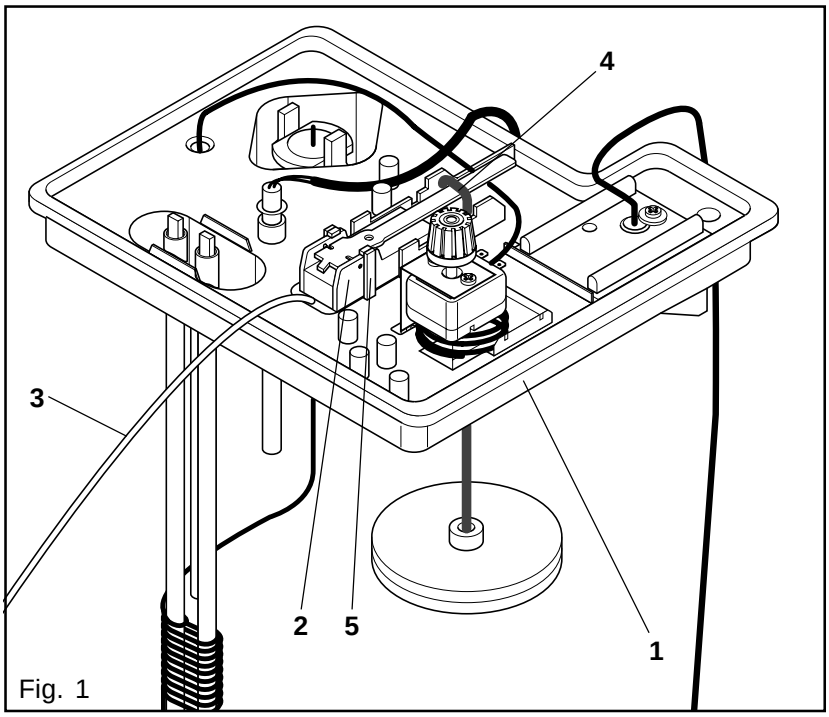


Fig. 1

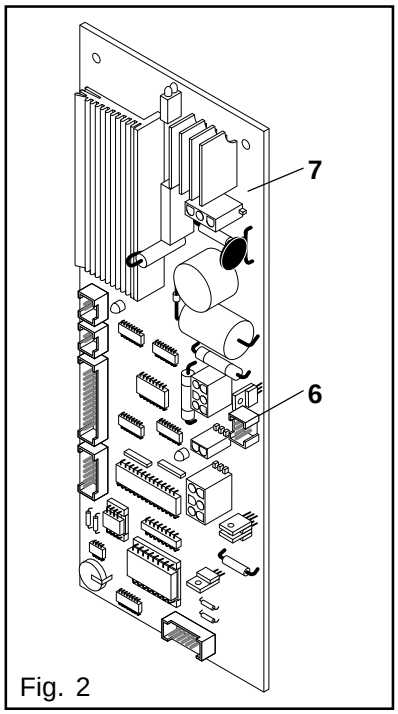


Fig. 2

Float switch

Disassembly:

- Carry out the preparations for the disassembly of the boiler cover (**1**). (Fig. 1) (see chap. 5A.2)
- Suspend the floater wire (**4**) over the float switch (**2**). (Fig. 1)
- Press the support (**5**) of the float switch (**2**) apart by using a pair of expansion nippers or universal nippers. (Fig. 1)
- Remove the float switch (**2**). (Fig. 1)

CAUTION: **Do not pull at the cable harness (3) for removing the float switch from the support. (Fig. 1)**

- Disconnect the float switch cable harness (**6**) from the control (**7**). (Fig. 2)
- Remove the contacts (**8**) of the float switch cable harness from the inlet valve (**9**). (Fig. 3)

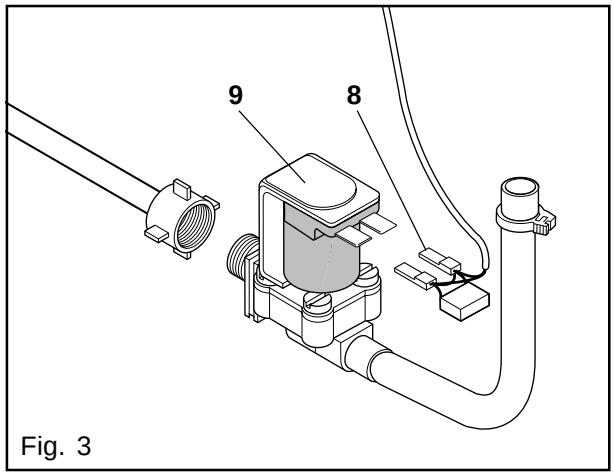


Fig. 3

Assembly:

- Assembly is done in the reverse order.

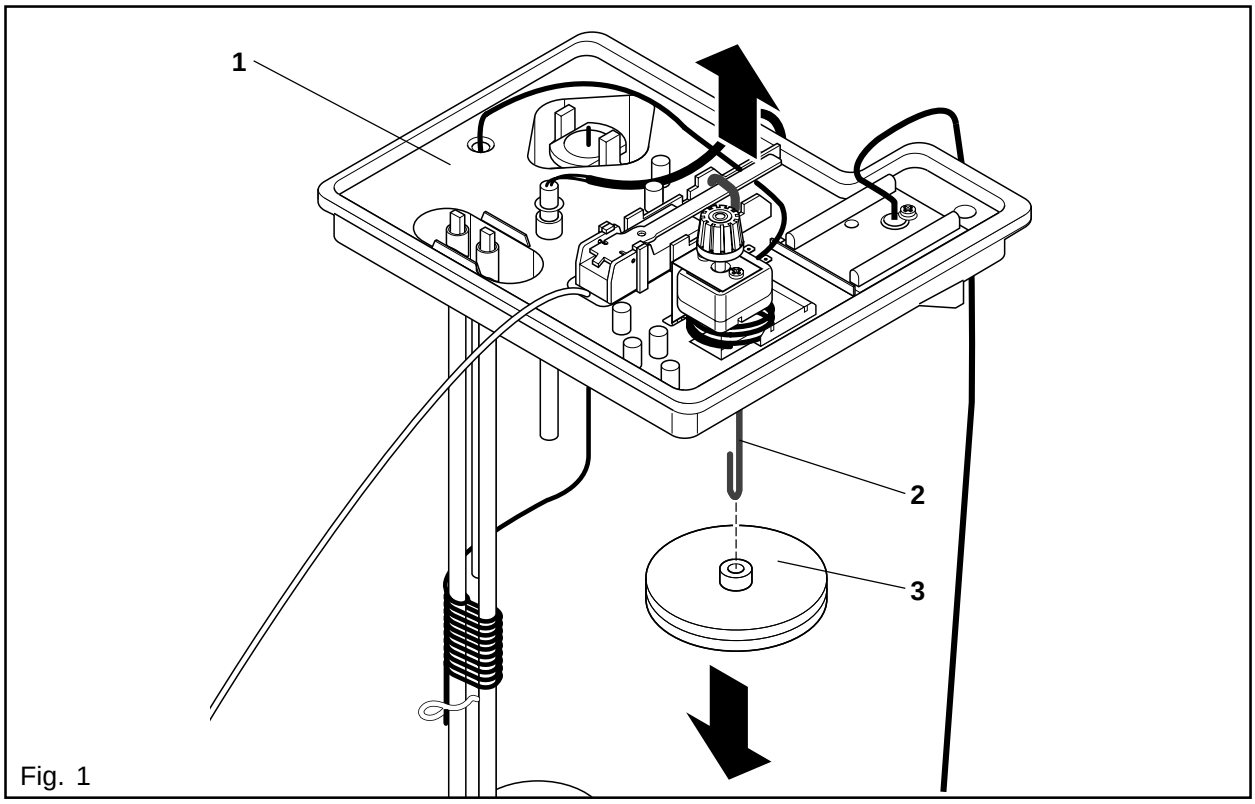


Fig. 1

Floater washer and floater wire

Disassembly:

- Dismount the boiler cover (**1**). (Fig. 1) (see chap. 5A.2)
- Unhinge the floater wire (**2**) at the float switch. (Fig. 1)
- Compress the floater wire (**2**) at the bottom by means of a pair of nippers. (Fig. 1)
- Pull the floater washer (**3**) over the floater wire (**2**). (Fig. 1)
- Again compress the floater wire (**2**) at the bottom and guide it through the opening in the boiler cover towards the top. (Fig. 1)

Assembly:

- Assembly is done in the reverse order.

When mounting the floater washer (**3**) make sure that the bottom part of the floater wire (**2**) is bent approx. 0.5 cm (0.20 inches) apart. (Fig. 2)

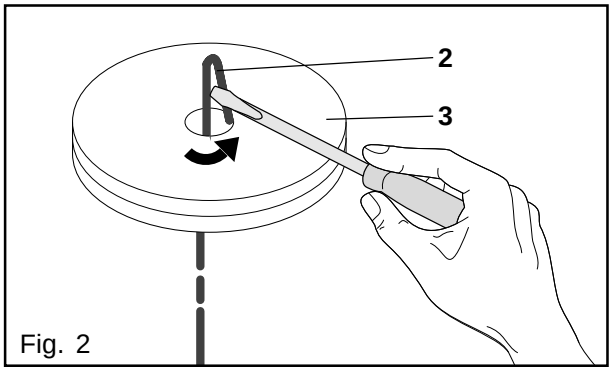


Fig. 2

Low temperature sensor

Disassembly:

- Carry out the preparations for dismounting the boiler cover. (see chap. 5A.2)
- Disconnect the cable harness of the low temperature sensor (**1**) from the control (**2**). (Fig. 1)
- Withdraw the low temperature sensor (**3**) from the boiler cover (**4**). (Fig. 2)

Assembly:

- Assembly is done in the reverse order.

When mounting the low temperature sensor, ensure that the cable harness (**5**) is placed between the guides (**6**) in the boiler cover. Otherwise the float switch function (**7**) may be affected.

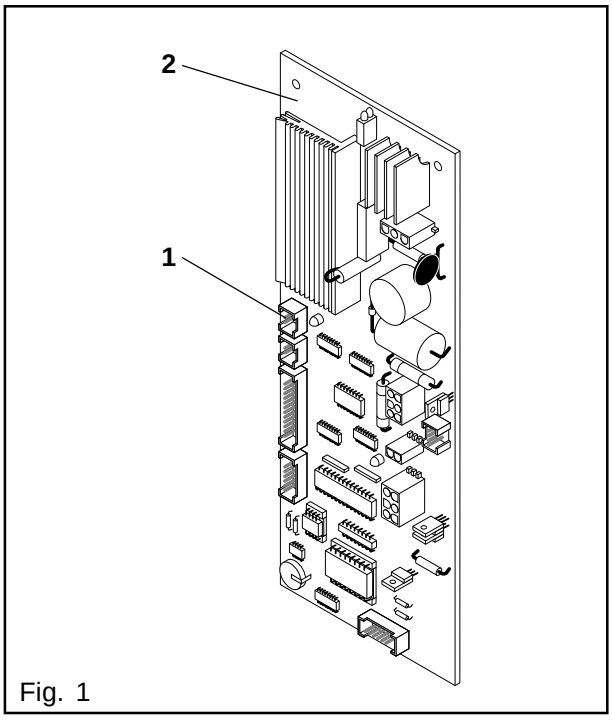


Fig. 1

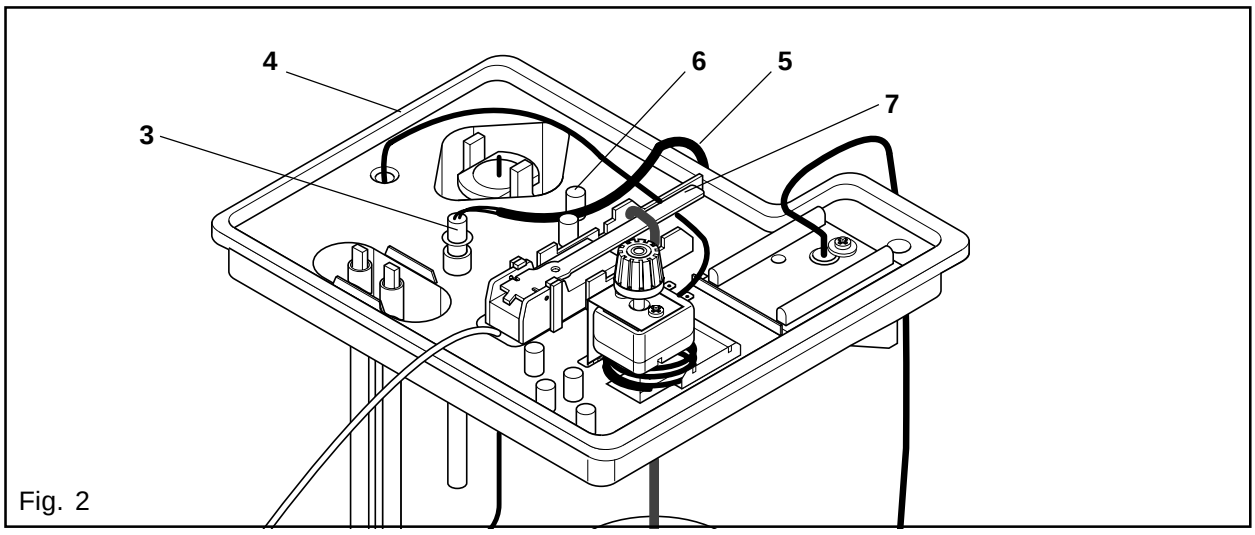


Fig. 2

Overflow safety thermostat

Disassembly:

- Carry out the preparations for dismounting the boiler cover (**1**). (Fig. 1)
  (see chap. 5A.2)
- Dismount the control (see corresponding chapter) and remove the insulating foils (**8**). (Fig. 2)
- Loosen the fastening screw (**2**) and the fastening washer (**3**) of the overflow safety thermostat sensor (**4**). (Fig. 1)
- Press the sensor (**4**) of the overflow safety thermostat out of the support. (Fig. 1)
- Disconnect the contacts (**7**) of the main flexi cable harness from the overflow safety thermostat (**6**). (Fig. 2)
- Loosen the screws (**5**) of the overflow safety thermostat (**6**). (Fig. 2)

Make sure that the lock washers do not get lost.

- Remove the overflow safety thermostat.
- Remove the wiring towards the sensor of the overflow safety thermostat from the support at the boiler wall.

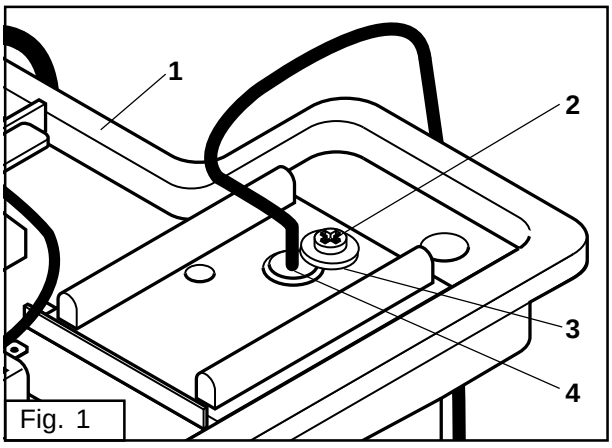


Fig. 1

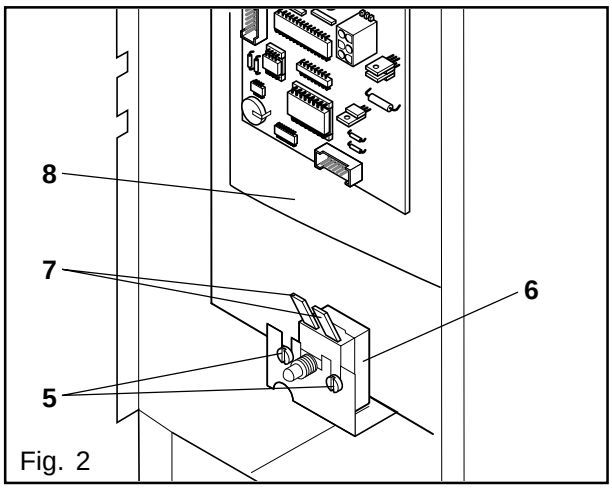


Fig. 2

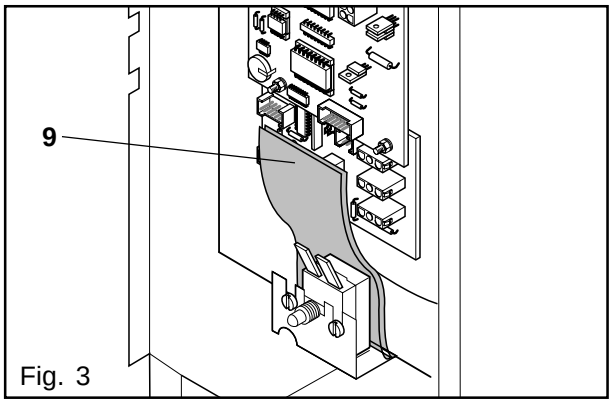


Fig. 3

Assembly:

- Assembly is done in the reverse order.

When mounting the wound wiring of the overflow safety switch, unwind approx. 3 windings from the sensor side (upwards) and approx. 2 windings of the thermostat side (downwards). Mount the overflow safety switch and the sensor. Place the wound wiring behind the fastening strap of the boiler insulation.

Make sure to suspend the insulation foil (**8**) beneath the control. When applying the I^2C interface boards espresso/café cool, place two small insulating foils (**9**) between the interface board and the overflow safety thermostat. (Fig. 2, 3)

Heating element

Disassembly:

- Carry out the preparations for dismounting the boiler cover. (see chap. 5A.2)
- Dismount the boiler cover (**1**). (Fig. 1) (see chap. 5A.2)
- Withdraw the insulating hoses from the heating element contacts (**2**). (Fig. 1)
- Loosen the clamp of the dry running protection (**3**) at the heating element. (Fig. 1)
- Unwind the dry running protection (**4**) from the heating element (**5**). (Fig. 1)
- Loosen the three nuts, the lock washer and the flat plug (**6**) at the heating element. (Fig. 2)
- Remove the heating element, the screw and the bottom part of the seal [(**7**)-(**10**), Fig. 3, 4] towards the bottom.
- Withdraw the upper part of the seal (**6**) towards the top. (Fig. 2)

Assembly:

- Assembly is done in the reverse order.

CAUTION: **When replacing the heating element, the dry running protection must be replaced as well. The sensor wire of the dry running protection must be wound around the heating element according to the description given in the chapter 'dry running protection'.**

When mounting, observe that the two seal parts are positioned exactly on top of each other above and below the cover. Additionally ensure that the silicone hoses are moved over the heating element contacts.

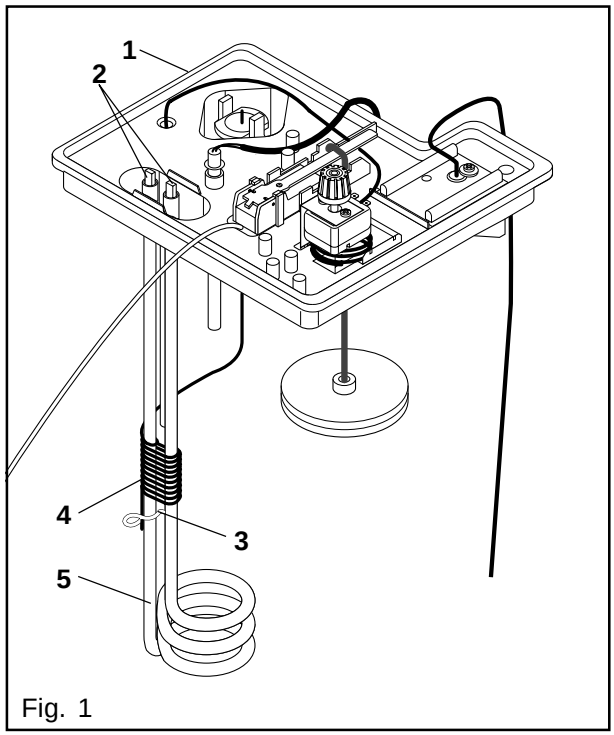


Fig. 1

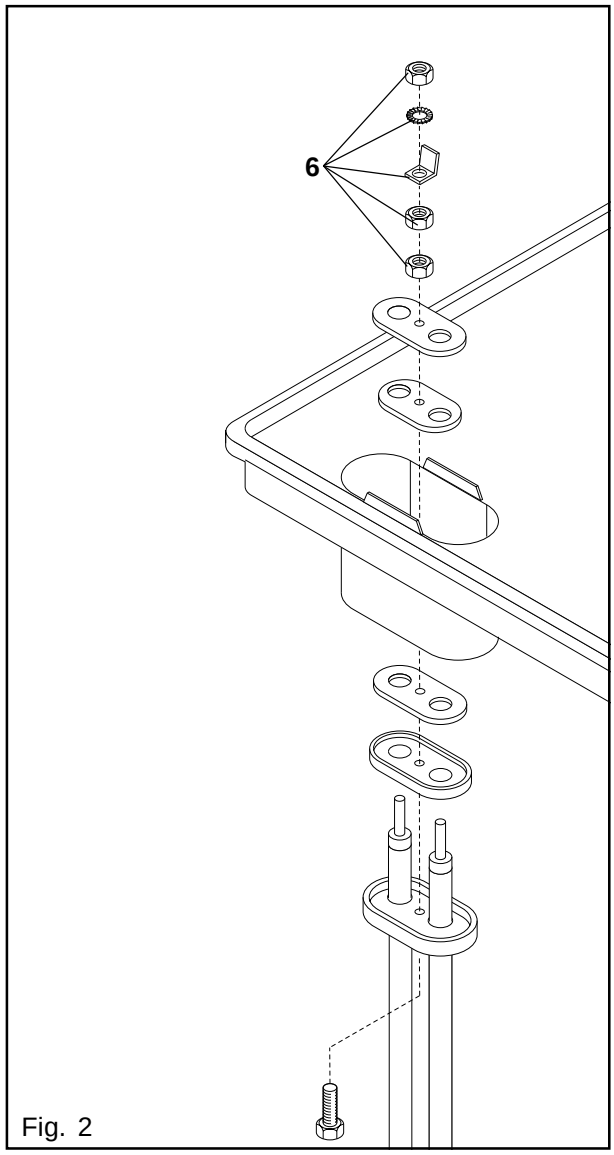


Fig. 2

When replacing the seals, the corresponding spare parts included in the kit 'seal for heating' must be mounted in the correct order in accordance with fig. 3 or 4.

- The seals can be distinguished by their different colours.
  Loval = white
  Eltra = red

  The distance plates can be distinguished by their thicknesses:
  The 'Eltra' distance plate is thicker than the 'Loval' distance plate.

Assembly situation
'Eltra'

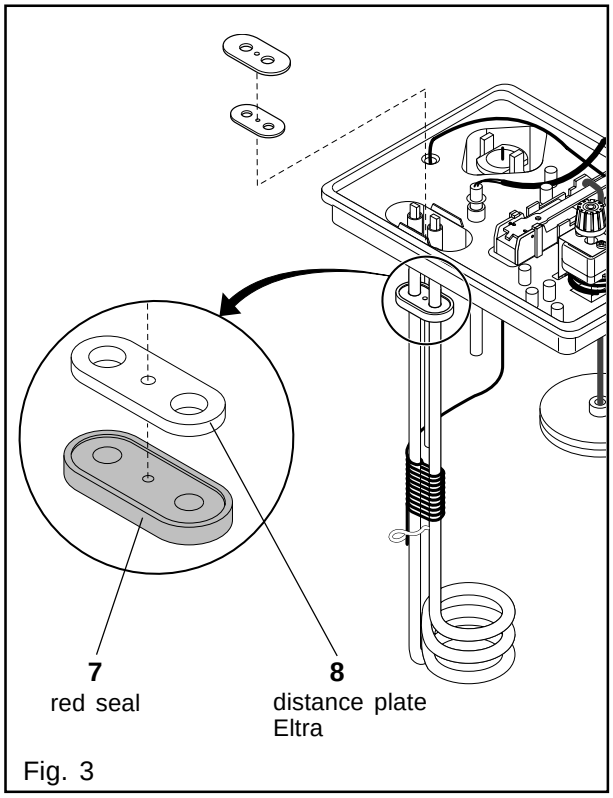


Fig. 3

Assembly situation
'Loval'

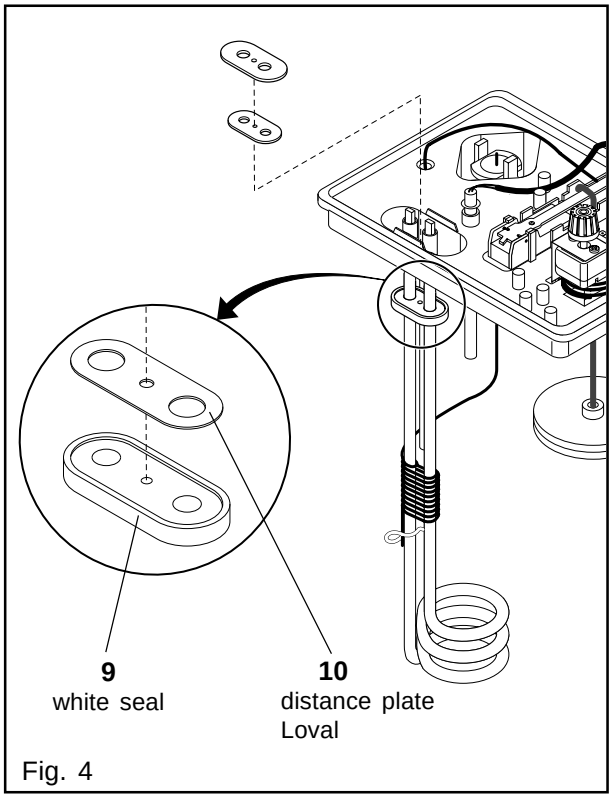


Fig. 4

A.2.4 Disassembly of the Boiler

Preparation:

- Carry out the preparations for dismounting the boiler cover. (see chap. 5A.2)
- Disconnect all electrical connections.
- Remove the front part. (see chap. 5G.2)
- Remove the inlet valve. (see chap. 5A.2)
- Dismount the control. (see chap. 5K.2)
- Remove the foil.

Disassembly:

- Disconnect the overflow hose (**1**) from the overflow tray (**2**). (Fig. 1)
- Remove the overflow tray (**2**). (Fig. 1)
- Press the clamping supports of the boiler cover on one side against the housing first and unhinge the boiler towards the top.
- Repeat the process on the other side of the housing.
- Remove the boiler.
- Simultaneously remove the hose of the hot water delivery tap.

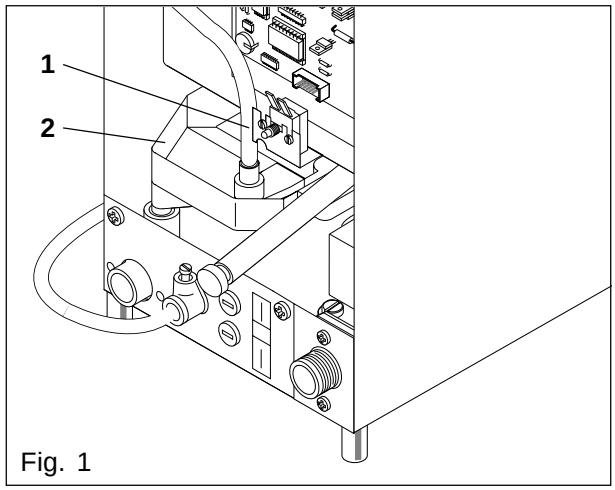


Fig. 1

Assembly:

- Assembly is done in the reverse order.

Dry running protection

- Carry out the preparations for dismounting the boiler cover (**1**). (Fig. 1) (see chap. 5A.2)
- Dismount the boiler cover. (see chap. 5A.2)
- Unwind the sensor wire (**2**) from the heating element (**3**). (Fig. 1)
- Withdraw the dry running protection (**4**) above the cover towards the top. (Fig. 1)

Assembly:

- Assembly is done in the reverse order.

When mounting the dry running protection, competely straighten the sensor wire.
Guide the wire and the sealing disc through the opening in the boiler cover.
Wind the sensor wire around the heating element as follows:

- Pull the sensor wire loosely up to the recess in the heating coil which is situated approx. 15 cm below the heating element contacts.
  Starting from the recess, the sensor wire must be wound downwards around the heating element. (Fig. 2)
- Wind the sensor wire once around one side of the heating element as shown in fig. 2.
- Wind the sensor wire 10 times around both sides of the heating element as shown in fig. 2.
- Fasten the sensor wire to the heating element by means of the clamp. (Fig. 2)

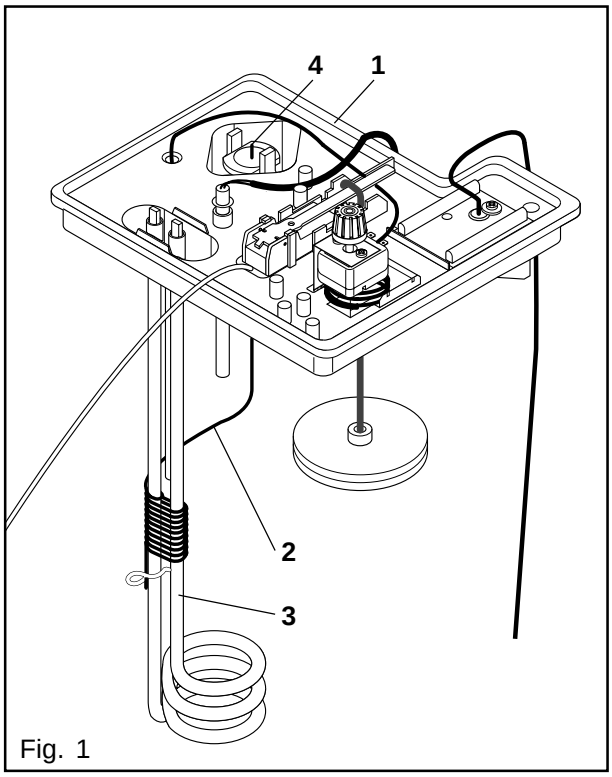


Fig. 1

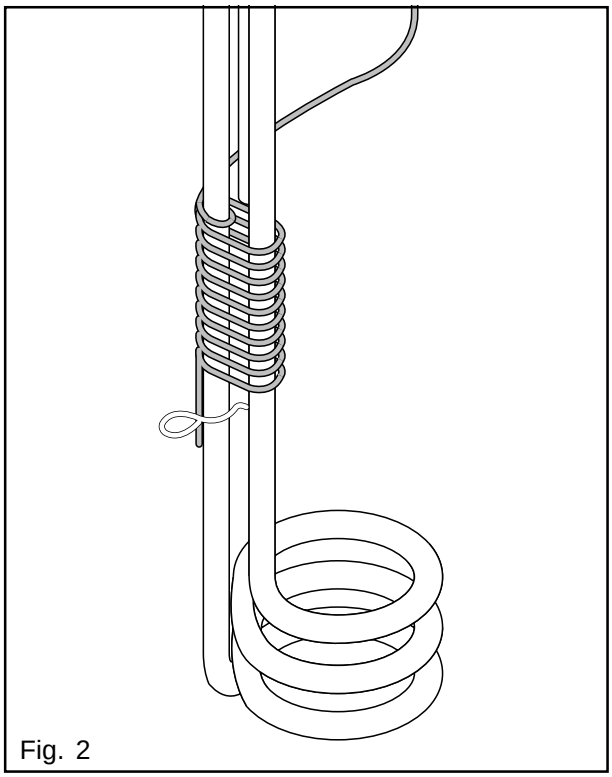


Fig. 2

A.2.5 Disassembly of the Hot Water Delivery Tap

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Drain the water. (see chap. 5A.2)
- Place a sufficiently large container (pot) underneath the hot water delivery tap and actuate the tap (**1**) until no more water is delivered. (Fig. 1)

CAUTION: There is the danger of being scalded by hot water.

- Remove the front part (**2**). (Fig. 2) (see chap. 5G.2)

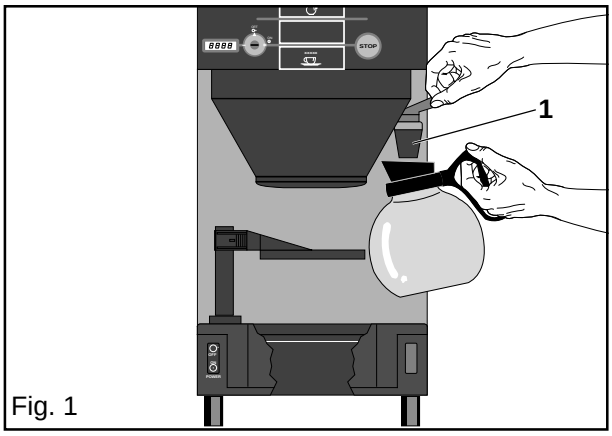


Fig. 1

Disassembly:

- Hold the brass bushing at the hot water delivery tap inside the housing by means of a pair of universal nippers. Locktite can prevent the bushing being moved easily.
- Close the hot water delivery tap (**3**) counterclockwise. (Fig. 2)

Make sure that the seals of the hot water delivery tap inside and outside the housing do not get lost.

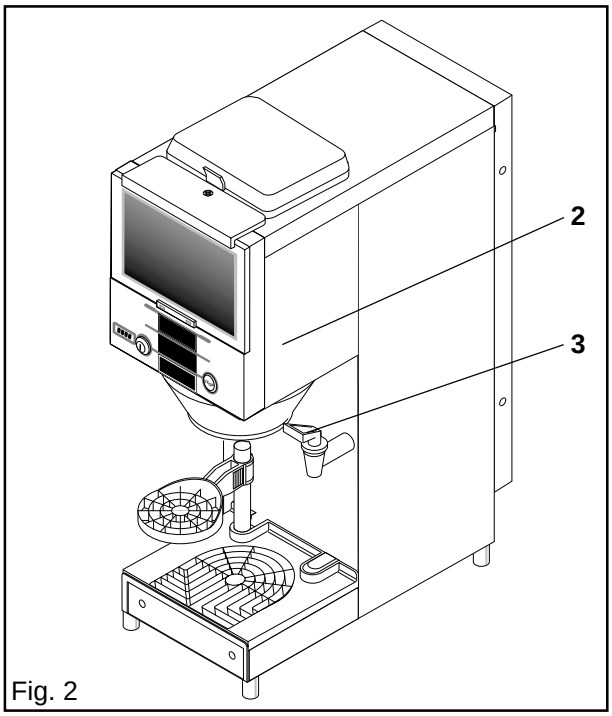


Fig. 2

Assembly:

- Mount the new hot water delivery tap in the reverse order.

CAUTION: When a new hot water delivery tap is mounted, Loctite must be applied between the thread and the brass bushing as protection against torsion.

Ensure that the seals are mounted inside and outside.

Assembly of the kit 'dummy caps'

If required by the customer, it is possible to remove the hot water delivery tap.

- Dismount the hot water delivery tap.
- Remove the brass bushing from the hose.
- Close the hose (**4**) using the plug (**5**) included in the kit. (Fig. 3)
- Secure the hose (**4**) by means of a hose clamp (**6**) as shown in fig. 3.
- Remount the dispenser.
- Close the opening in the housing by using the dummy cap (**7**) included in the kit. (Fig. 3)

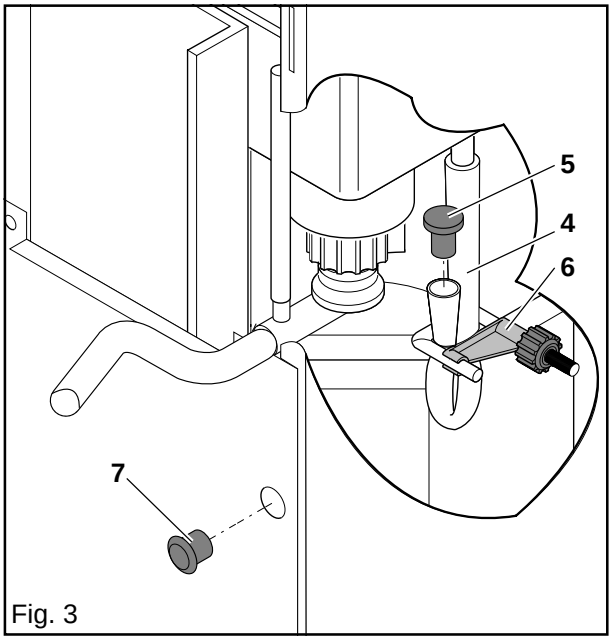


Fig. 3

A.3 Functional Descriptions

A.3.1 Total Overview - Water System

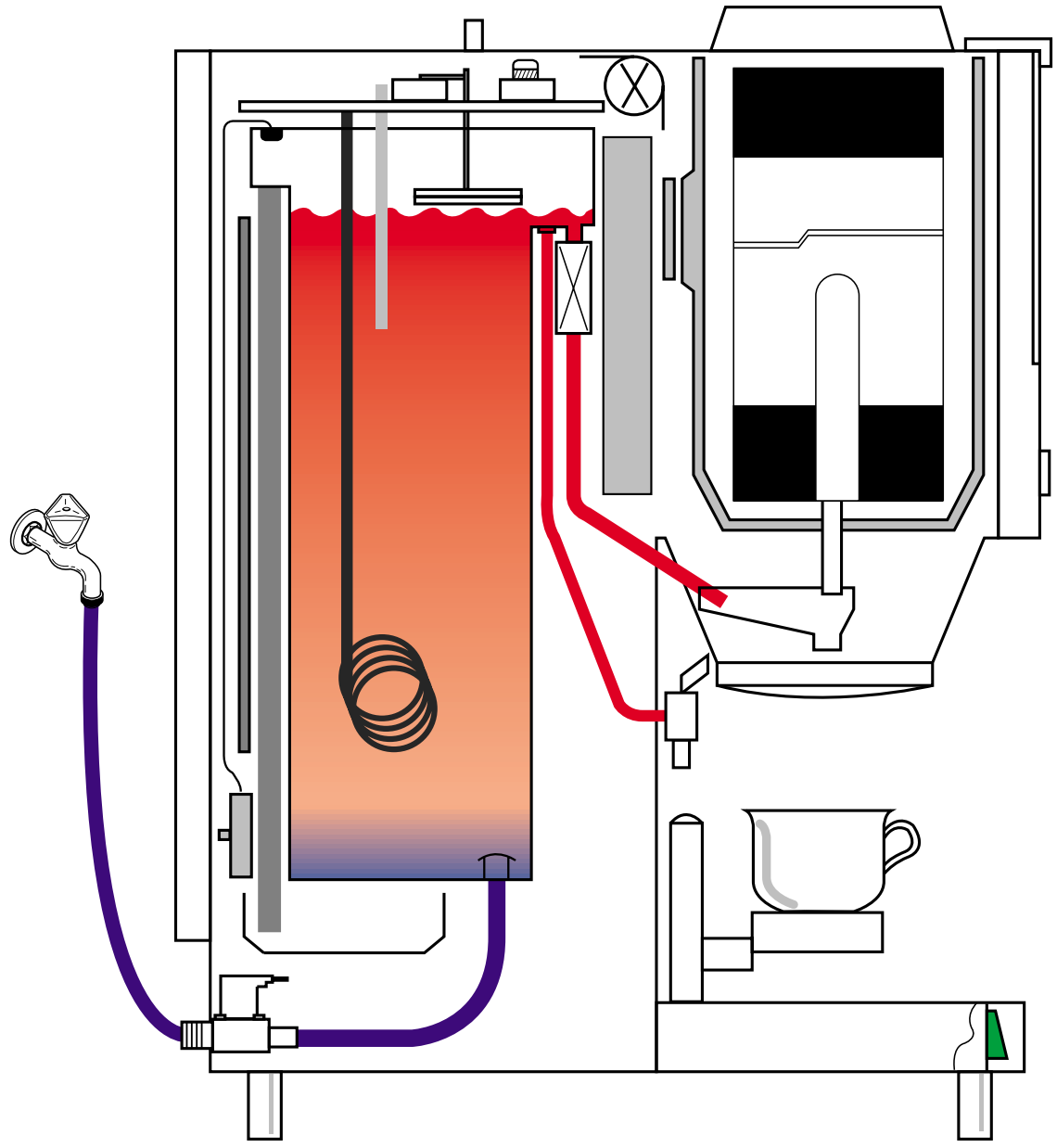


Fig. 1

Total overview standard dispenser

A.3.2 Function: Inlet Valve

- The essential parts of the inlet valve are (fig. 1):
  - the diaphragm with cleaning wire (**1**)
  - the tappet (**2**)
  - the coil
  - the valve housing (**3**) with sieve, flow rate controller and outlet spout.

- When the valve is closed, the tappet closes the bore in the middle of the diaphragm.

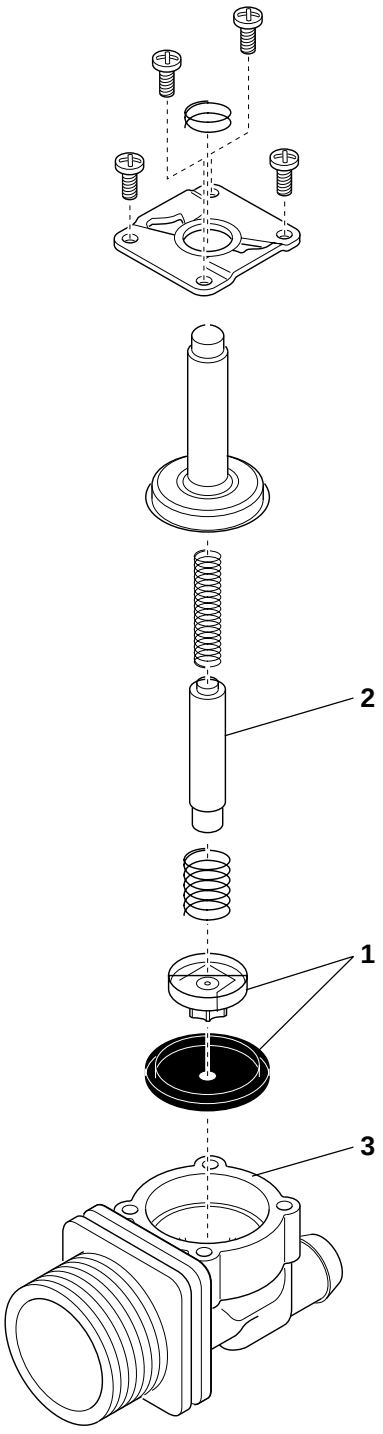


Fig. 1

Opening and closing the valve

- Water pressure is on both sides of the diaphragm. A compensation of the pressure is affected by a very small opening in the diaphragm.
- This compensation hole (**1**) is pierced by a cleaning needle (**2**). (Fig. 1)
  Thus every time the valve opens, i.e. every time the diaphragm moves, the compensation hole is cleaned.
- There is a higher pressure on the upper diaphragm side (**3**) than on the lower diaphragm side, as there is no water pressure on that part of the lower side which is covered by the outlet spout. (Fig. 1)
- In this way, the diaphragm keeps the outlet spout closed.
- If an electric current is applied to the coil, the tappet (**4**) is withdrawn and the bore (**5**) in the middle of the diaphragm is opened. (Fig. 1)
  Water can flow through it from the upper part.
- As the pressure compensation hole is much smaller than the opening in the middle of the diaphragm, the pressure cannot be compensated any more.
- The pressure on the upper side of the diaphragm decreases in contrast to the water pressure on the lower side.
- This causes the diaphragm to move upwards and open the outlet spout.
- Water is running from the water supply line through the valve.
- As soon as the current supply to the coil is interrupted, the tappet closes the centre opening which causes the pressure on the upper side of the diaphragm to increase.
- The valve closes.

Additional spring

- The additional spring (**6**) which presses onto the upper side of the diaphragm, only slightly influences the function of the valve.
- The spring effects, however, a faster closing which enables a more precise level regulation in the boiler.
- The additional spring also prevents water from flowing out of the boiler if the water supply line is disconnected.

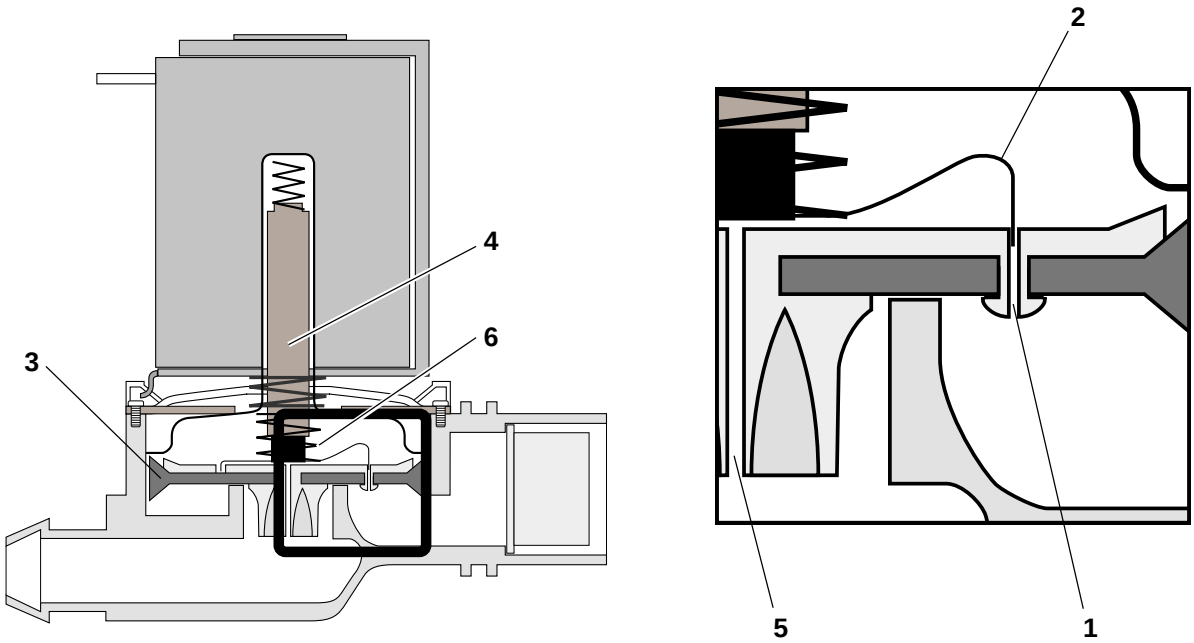


Fig. 1

Flow rate controller

- The flow rate controller is installed on the inlet side of the valve.
- It reduces the flow rate of the incoming water to approx. 5 l/min.
- This ensures that the boiler overflow can take the amount of incoming water if the water inlet control fails.
- The flow rate controller limits the flow rate with a precision of +/-10 % independent on the water supply pressure.
- If the dynamic pressure falls below 0.8 bar (11.6 psi) a sufficient flow rate cannot be guaranteed.
- In this case the water level in the boiler cannot be controlled any more, especially when the beverage delivery takes too long or with frequent beverage deliveries.
- Consequences:
  - Deviations in the dosing quantity
  - Possible blocking of the delivery (see 'error codes')

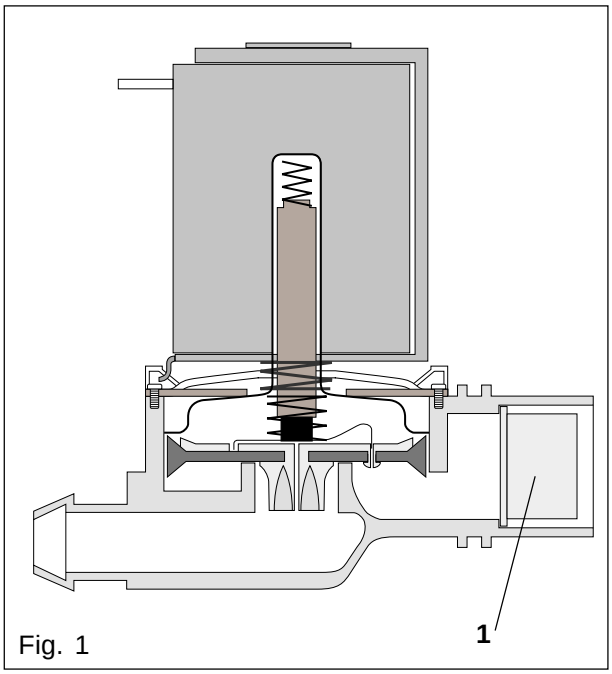


Fig. 1

Filter sieve

- A removable filter sieve (**1**) in the valve inlet spout (in front of the flow rate controller) prevents dust particles from entering. (Fig. 1)
- It is recommended to install an additional filter sieve in the supply line when there are regularly great amounts of dust particles in the water supply lines. (Fig. 1)

A.3.3 Function: Boiler

- The boiler (**1**) with a capacity of 6.5 l has been designed as an open system (fig. 1):
- The water inlet system prevents the boiler from overflowing.
- An overflow tube (**2**) prevents pressure being generated in the container. (Fig. 1)
- The water runs into the boiler via the non-return valve in the boiler base (**3**). (Fig. 1)
- The outlet spouts for the water coil (**4**) and the hot water delivery tap (**5**) are situated in the upper boiler part. (Fig. 1)
- This guarantees the delivery of hot water, as cold water is added in the boiler base which then is heated up and afterwards moves upwards.
- Additionally, the outlet spouts positioned in the upper boiler part guarantee that the water level in the boiler does not fall below these. Dry running of the heating element is prevented.
- A deflection plate (**6**) above the outlet spout prevents lime particles from running through the outlets.
- An outlet (**7**) in the boiler base enables drainage of the water. (Fig. 1)

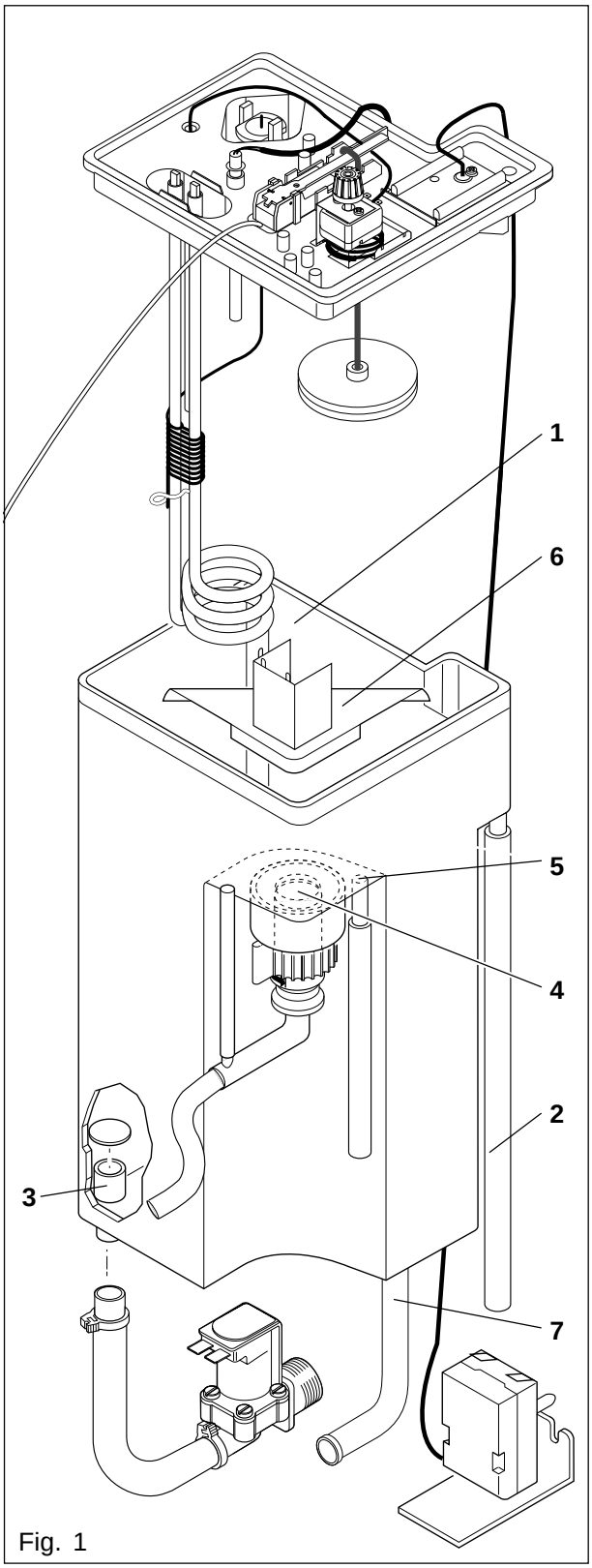


Fig. 1

A.3.4 Function: Water Inlet into the Boiler

- The water inlet into the boiler is regulated by means of a floater washer (**1**) (fig. 1):
- The floater washer is suspended above the spring supported float switch lever (**2**) by means of a stainless steel wire. Depending on the changing water level in the boiler it moves upwards or downwards. (Fig. 1)
- When the water level in the boiler is low, the floater washer pulls the float switch lever downwards. The float switch connects the water inlet circuit (output of 24 VAC).
- The inlet valve opens (**3**). (Fig. 1)
- Water from the supply lines runs through the inlet spout and the non-return valve (**4**) from below into the boiler. (Fig. 1)
- With increasing water level, floater washer moves upwards and the float switch lever is released. The water inlet circuit is opened and the water inlet stops.
- In this way, the water level is kept at a constant level while the dispenser is operating.

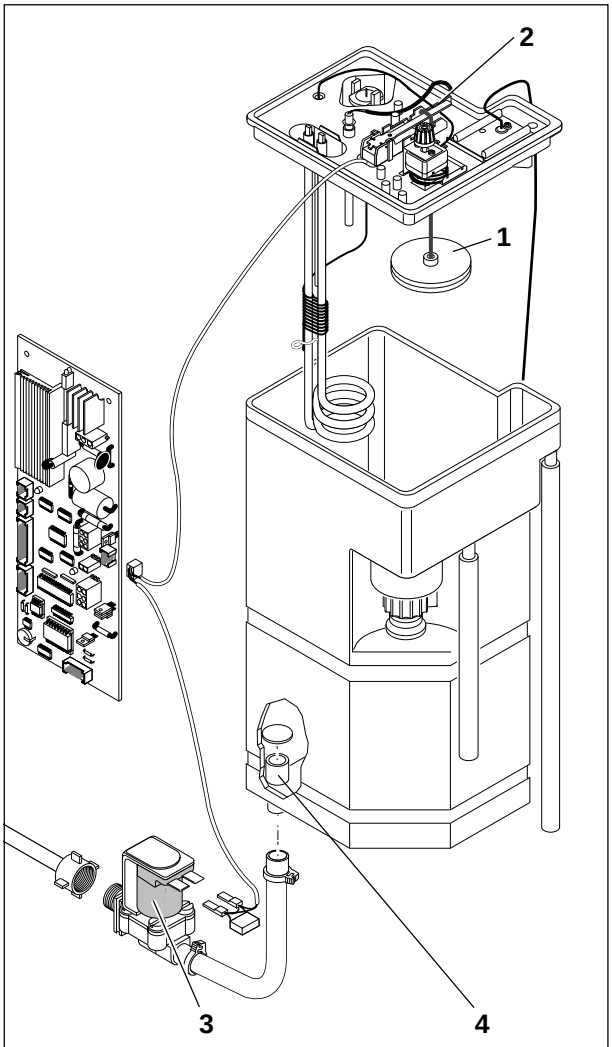


Fig. 1

A.3.5 Function: Heating and Temperature Regulation

- The thermostat sensor with protective tube (**1**) reaches into the water. A low temperature causes a pressure decrease in the thermostat capillary which results in the connection of the thermostat contacts. The connection value is approx. 4 °C (39 °F) below the adjusted thermostat value.

- The heating element (**2**) heats up the water until the temperature adjusted at the thermostat is achieved. An increased pressure in the thermostat capillary interrupts the electric circuit by opening the contacts and thus the heating is switched off. (Fig. 1)

- The capillary (**3**) of the dry running protection is wound around the heating element. At a certain overtemperature the heating circuit is interrupted by opening the contacts. Thus overheating due to lack of water in the boiler is prevented.
  The dry running protection is equipped with a manually actuated reset button (**4**) (in the boiler cover). (Fig. 1)

- The safety thermostat (overflow) (**5**) is placed on the outside. Its sensor (**6**) is mounted in the boiler cover above the overflow tube. The thermostat contacts open and interrupt the heating process if steam is produced or the water boils over. The manually actuated reset button at the safety thermostat must only be actuated after the dispenser has been disconnected from the mains supply. (Fig. 1)

- When the water temperature decreases below 80 °C (176 °F), the temperature sensor switches the yellow LED at the operating panel on.

- The heating circuit must be protected by a fuse outside the dispenser in accordance with the national regulations of the energy suppliers.

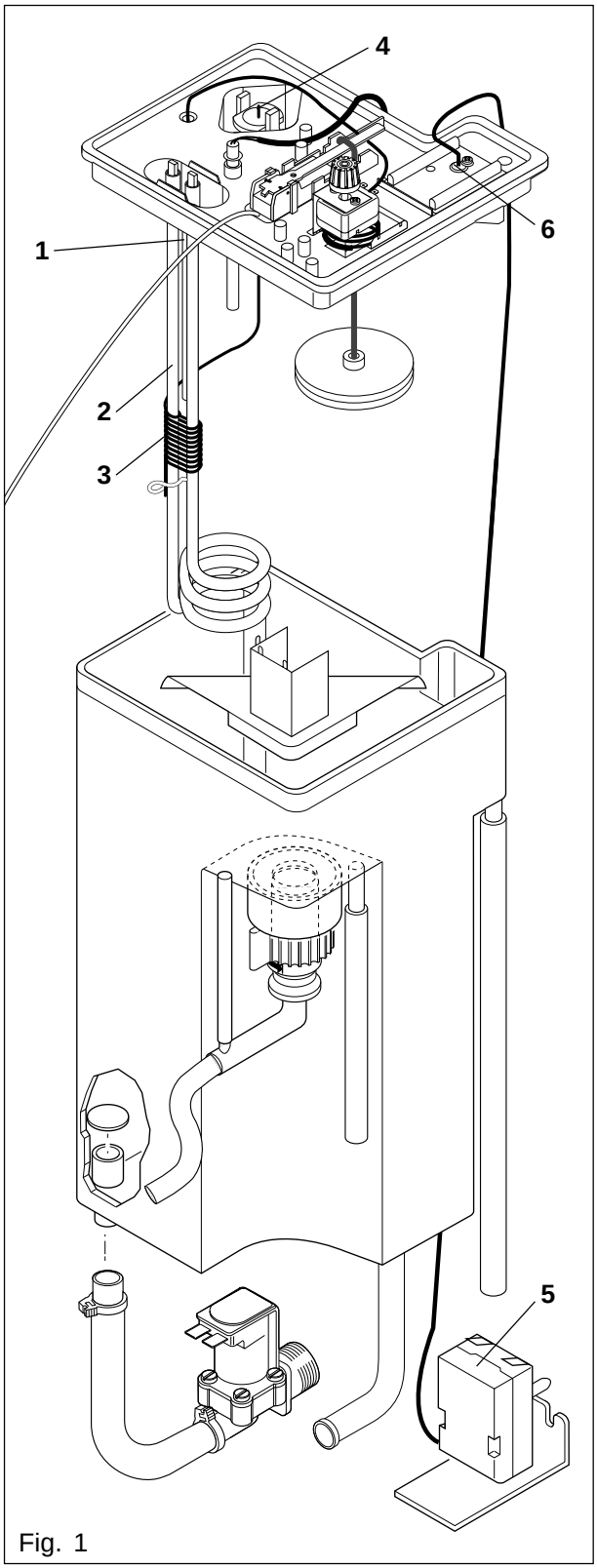


Fig. 1

A.3.6 Function: Water Outlet System and Outlet Valve

- The valve tappet (**1**) made from stainless steel is situated in the outlet spout (**2**) of the boiler (**3**) and closes the valve by tight fitting at the outlet elbow (**4**). (Fig. 1, 2)
- By actuating a delivery button, a voltage is induced in the water coil which surrounds the outlet valve.
- The magnetic field of the coil lifts the valve tappet. Water runs through the outlet elbow to the outlet trough (**5**). (Fig. 1)
- The valve remains open until the water quantity required for the adjusted beverage volume is delivered.
- The water delivery volume depends on the beverage strength (ratio) and the volume. Both values are adjusted on the control board. (see programming)
- The hot water delivery tap (**6**) is connected directly to a second outlet spout at the boiler. (Fig. 1)

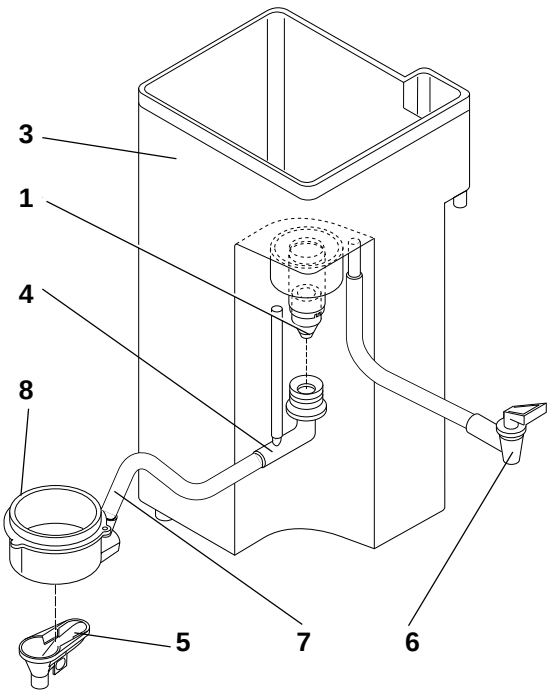


Fig. 1

Outlet valve

- The water flow rate depends on the water pressure and the outlet cross section.
- The water inlet system enables a constant water level in the boiler and therefore a constant water pressure.
- A jet in the outlet elbow determines the outlet cross section.
- Hence a water flow rate of 4.5 l/min. can be achieved.
- The outlet elbow (**4**) is positioned in the outlet spout of the boiler. The outlet hose (**7**) leads the water via the screened coil (**8**) to the outlet trough (**5**). (Fig. 1, 2)
- An air tube (**9**) at the outlet elbow guarantees fast running of the water and prevents dripping when the valve is closed. (Fig. 2)

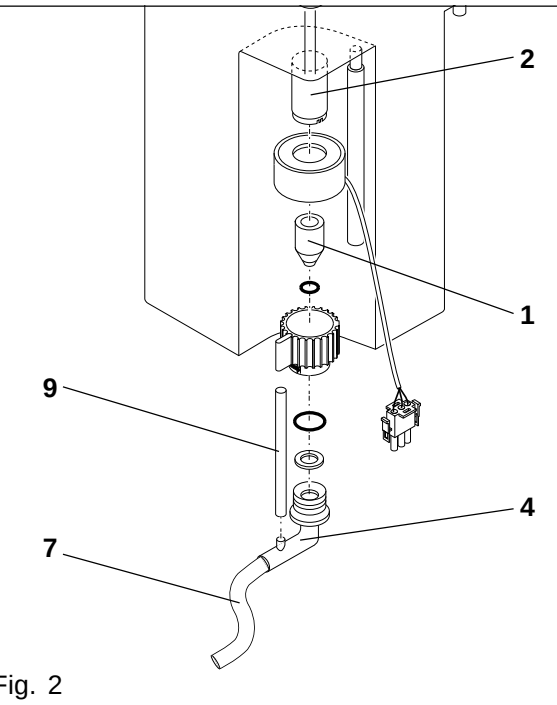


Fig. 2

Hot water delivery tap

- Hot water is delivered via the hot water delivery tap.
- The hot water delivery tap is connected to an individual outlet spout in the boiler by means of a hose.
- The hot water delivery tap can be opened by pressing the lever upwards or downwards.
- Hot water is delivered continuously as long as the lever of the hot water delivery tap is pressed downwards or upwards.

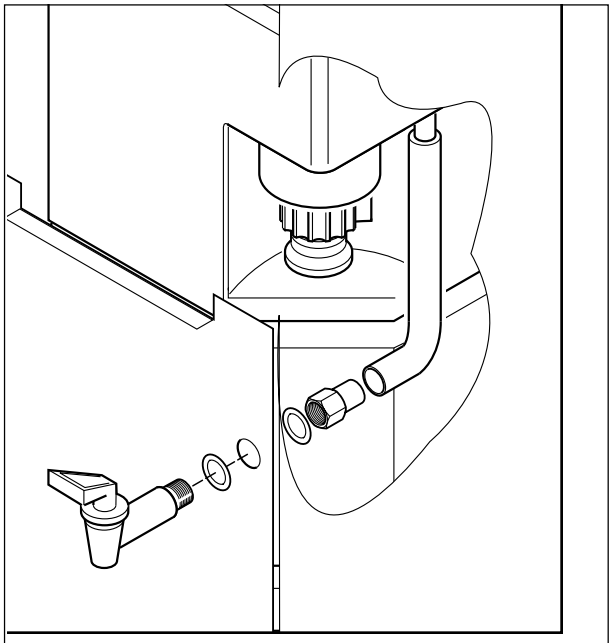


Fig. 1

A.4 Electrical Diagrams

A.4.1 Circuit - Water Inlet Valve

- The water inlet valve and the float microswitch are connected in series in the secondary circuit of the transformer T 02.

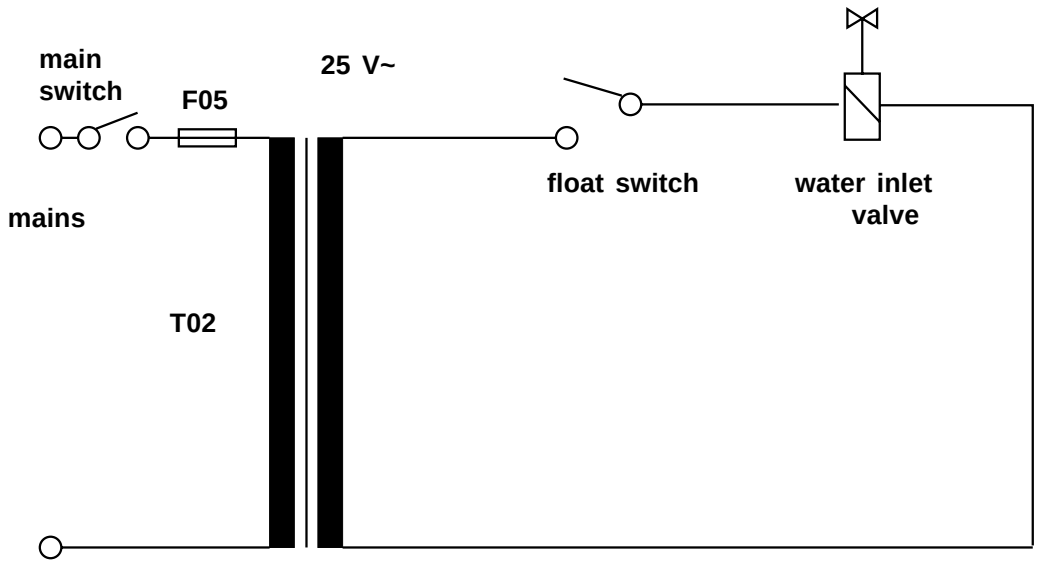


Fig. 1

A.4.2 Circuit - Water Coil

- For the operation of the water coil, the rectified secondary voltage of a transformer is used.
  When a delivery button is actuated, the water coil is connected to the microprocessor via a transistor.
  The duration depends on the adjusted volume.

- The microprocessor monitors the circuit by registering whether there is a voltage applied at 'A'.

- Standard/no delivery:
  When no delivery button is actuated and there is no voltage registered at 'A' by the microprocessor for an interval of 5 sec., the positive voltage is switched off and the 'empty' LED starts flashing.

- Standard/delivery:
  When no delivery button is actuated, there must be no voltage applied at 'A'.
  If there is, however, a voltage applied at 'A' in the case of an error, there will be no error indication.
  The error can only be noticed by the fact that only concentrate will be delivered in this case.

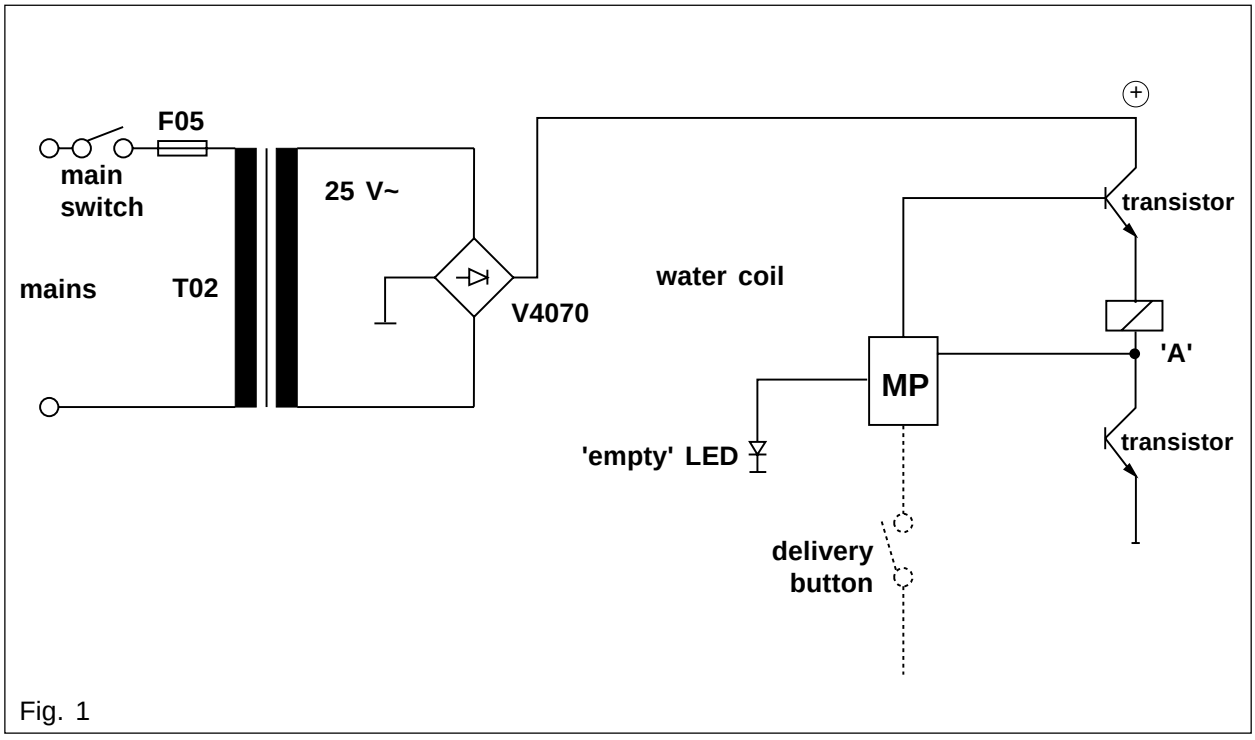


Fig. 1

A.4.3 Circuit - Heating and Temperature Regulation

- The heating circuit is now connected and the mains voltage is applied at the heating element. Electric current runs via the main switch, the closed contacts of the dry running protection, the heating element and the closed contacts of the thermostat and the safety thermostat (overflow).

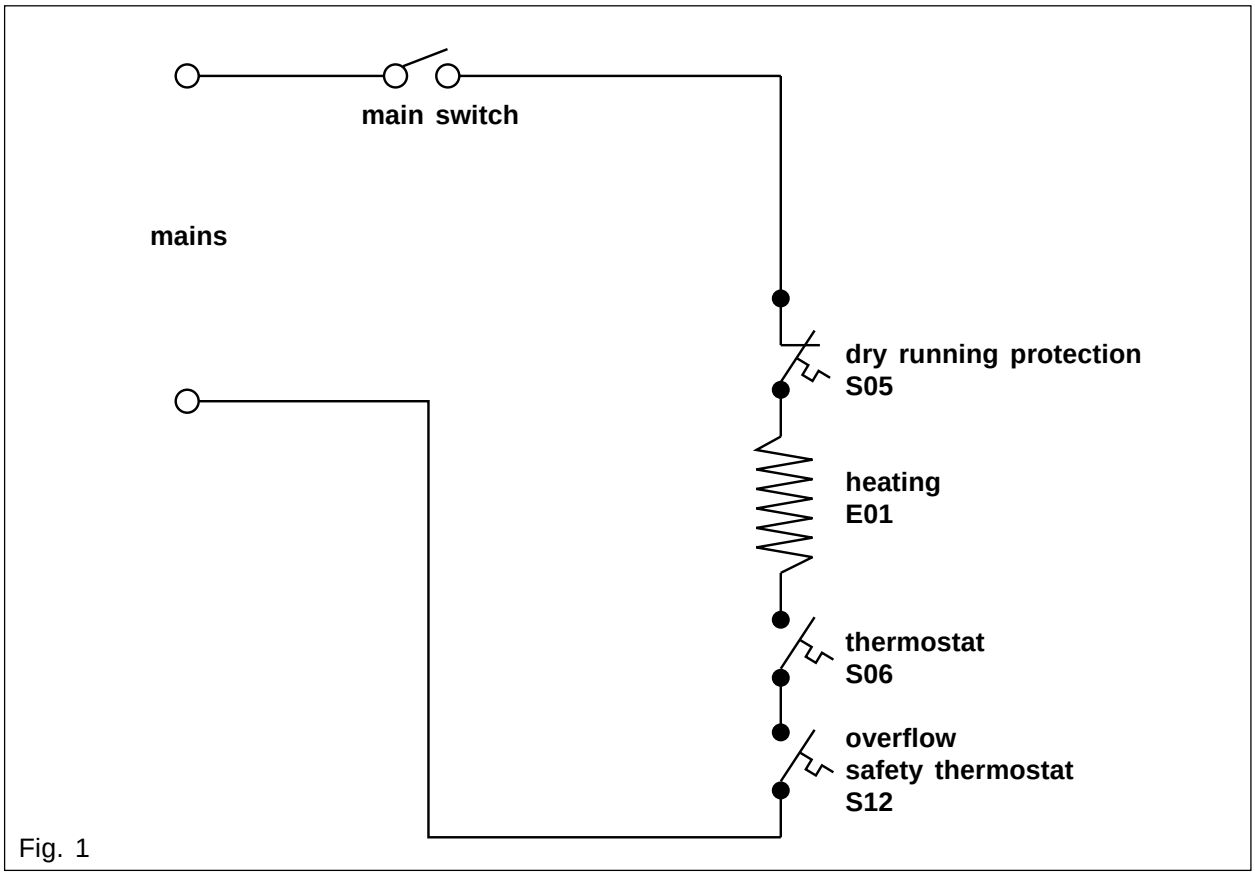


Fig. 1

A.5 Technical Specifications

WHAT:	HOW:
Inlet valve	Voltage: 24 V AC / 50 Hz Flow rate: 5 l/min Temperature: 90 °C (194 °F) Pressure: 0.2–10 bar(2.9-145 psi)
Inlet valve with café cool (kit without pressure reducer)	Pressure: 0.2–10 bar(2.9-145 psi) Voltage: 24 V DC
Water supply with café cool (kit with pressure reducer)	Connection to the water supply
Inlet valve tank top	Temperature: 90 °C (194 °F) Pressure: 0–60 mbar(0-0,87 psi) Voltage: 24 V AC / 50 Hz, directly switching
Boiler	Pressure: atmospheric pressure Capacity: 6.5 l
Tank (tank top version)	Capacity Water tank: 4 l
Thermostat	Temperature: 95 °C ± 3 °C (203 °F ± 37.4 °F)
Outlet valve (integrated in the boiler)	Flow rate: 4.5 l/min. Voltage: 24 V DC
Overflow safety thermostat	Triggering temperature: 90 °C - 8 K (194 °F) Triggering temperature: > 2000 m: 85 °C - 8 K (185 °F)
Low temperature indication:	Release value for low temperature indication: < 80 °C (176 °F)
Float switch	Voltage: 24 V AC

A.6 Options

Overview water system options

WHAT:	FOR:	REQUIRED FOR:
Café cool	Delivery of cold beverages	Kit café cool In different countries: external dosing unit
Overflow safety thermostat 85 °C (185 °F)	Installation of the Cafitesse 100 at > 2000 m over mean sea level	Kit for the application of Cafitesse 100 at altitudes over 2000 m

A.6.1 Café cool

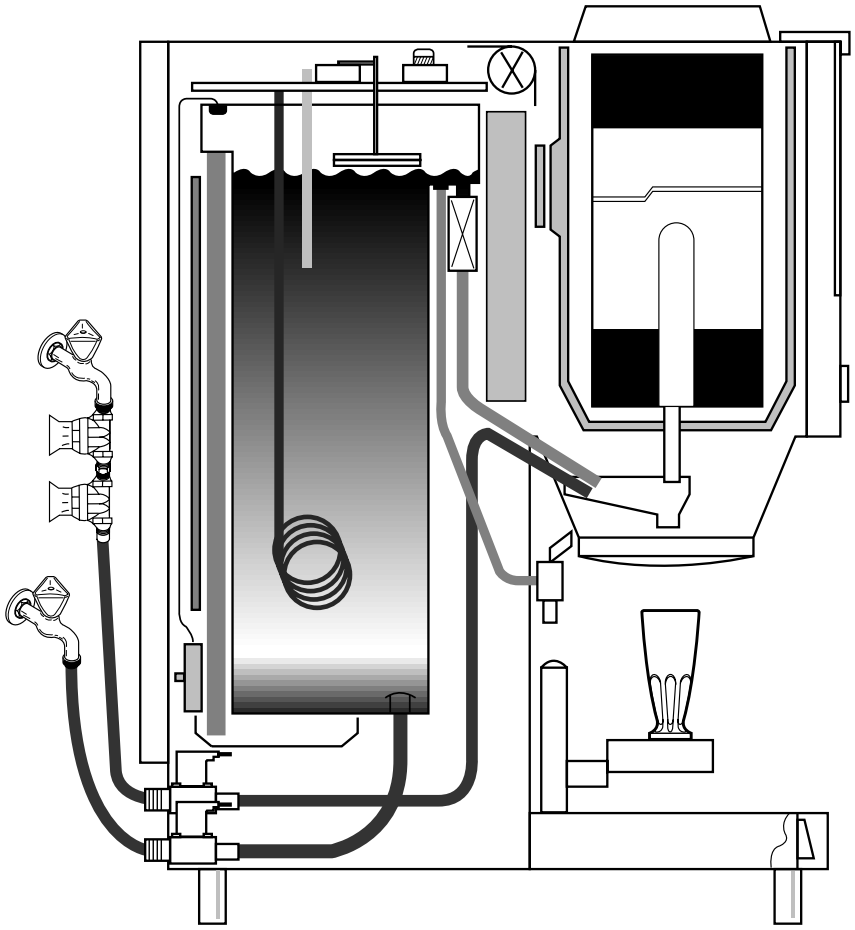


Fig. 1

- The Cafitesse 110 dispensers can additionally be equipped with the kit 'café cool'.

- This enables the delivery of cold beverages.

- The control must be equipped with the EPROM version 2.4 or a more actual version which contains special functions for the delivery of cold beverages (café cool). The inlet valve of the cold water system is controlled by an additional interface board.

- Water supply:
  - Connection to the water supply
  - Maximum static water pipe pressure: 10 bar (145 psi)
  - Minimum dynamic water pipe pressure: 0.9 bar (13.1 psi)

Water system

- Water supply connections supply the separated systems for hot and cold beverages.

Hot water system

- The hot water system is identical to that of the standard version dispenser.

Cold water system

- The water runs from the connection via the external dosing unit and an individual inlet valve directly through the outlet elbow into the housing for screened coil. (Fig. 2)

- The cold water dosing depends on how long the cold water inlet valve is opened which is controlled by the microprocessor.

- The time period for which the inlet valve is opened depends on the programming of the beverage volume on the control.

- The cold water system is equipped with a dosing system to guarantee a permanent flow rate of 20 cc/sec.

- Beverage strength and volume can only be programmed exactly, when the flow rate is correct.

- The dosing unit consists of two pressure reducers, which adjust the pressure in two steps.
  - The first pressure reducer is set to 1.1 bar (16 psi).
  - The second pressure reducer is set to 0.4 bar (5.8 psi).

  These settings result in the required flow rate of 1.2 l/min. (20 cc/sec.)

  The second pressure reducer must be readjusted if the flow rate essentially deviates from 1.2 l/min.
  This can happen when the pressure of the water supply is not within the range of 0.9 bar to 4 bar (13.1–58.0 psi).

- - In order to increase the flow rate: turn the adjustment button towards '+'.
  - In order to reduce the flow rate: turn the adjustment button towards '–'.

The cold water inlet valve requires 24 V DC. The hot water inlet valve requires 24 V AC.

Installation of the kit 'café cool'

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Drain the water. (see chap A.2)
- Remove the front part (**1**). (Fig. 2) (see chap. G.2)

Installation:

- Mount the valve support (**6**) to the cold water inlet valve (**5**) (solenoid valve) as shown in fig. 3.
- Fasten the silicone hose (**7**) with hose connector (**3**) and union nut (**2**) to the outlet of the cold water valve. (Fig. 3)
- Install the cold water valve at the left dispenser wall with the outlet side mounted towards the top. Use clamps (**4**) for this purpose. (Fig. 3)
- Push the hose towards the front between boiler and side wall.

CAUTION: The hose must not be bent or squeezed.

- Replace the outlet hose (**8**) at the boiler outlet valve by means of the shorter outlet hose (kit 'café cool'). (Fig. 4)
- Insert the angular piece (**2**) into the housing

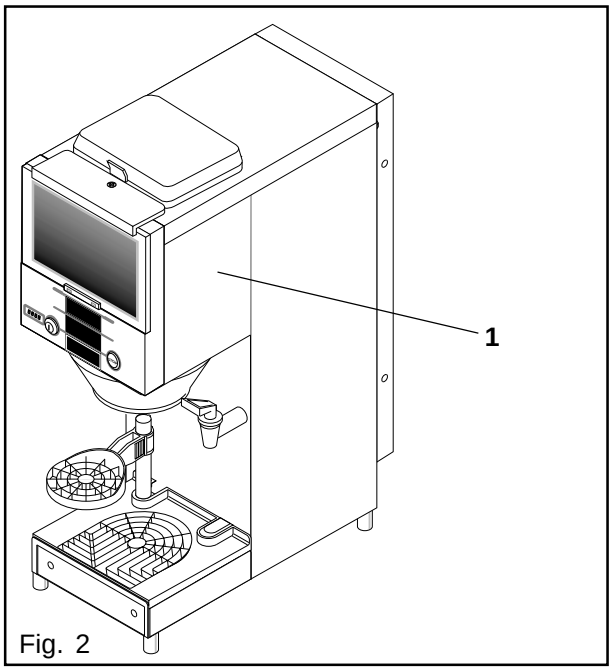


Fig. 2

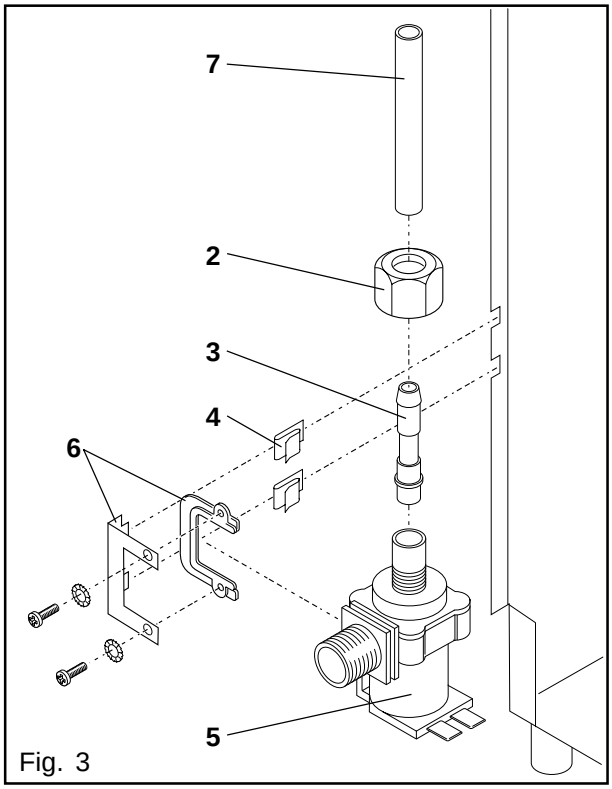


Fig. 3

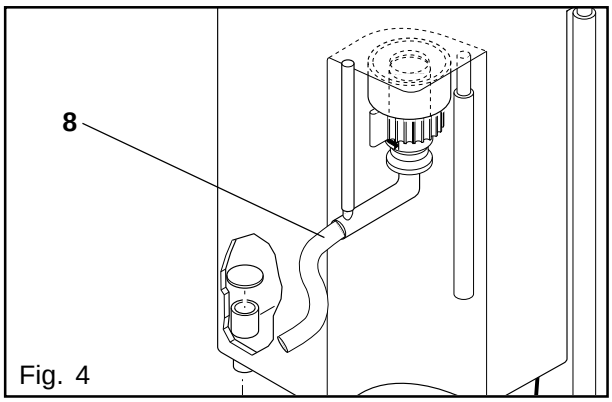


Fig. 4

for screened coil (**5**), connect the outlet hose (**1**) and the hose (**4**) by means of the fastening clip (**3**). (Fig. 5)

- Remove the control. (see corresponding chapter)
- Drill a bore into the rear wall, which has a diameter of 28 mm as shown in fig. 6. For this purpose, it is recommended to use a punching tool, e.g. a Rekord puncher.

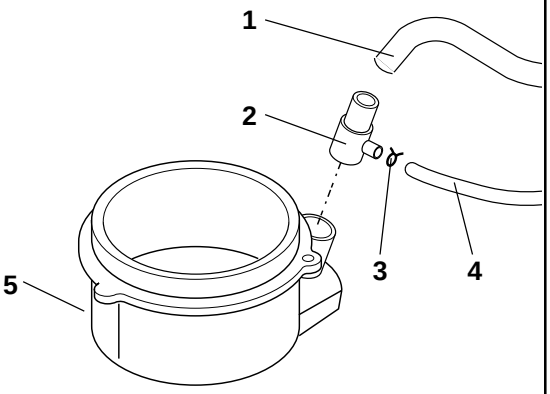


Fig. 5

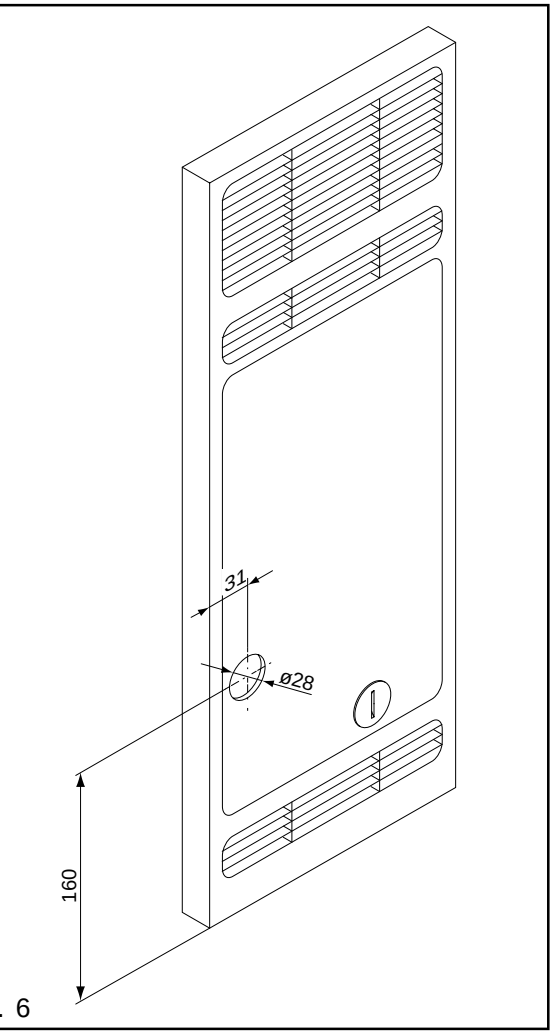


Fig. 6

- It must be observed that the bridges (**1**) on the I²C espresso/café cool interface board are closed. (Fig. 7)
- Connect the I²C espresso/café cool interface board (**3**) to the control (**2**) as shown in fig. 8.
- Attach the control to the boiler.
- Make sure that the two foils which are situated behind the overflow safety thermostat are placed in front of the control. (Fig. 9)
- Connect the cable harness of the I²C interface (**1**) to the plug ST10 (**2**) of the control (blue) and to the plug ST01 (**3**) of the interface board (blue). (Fig. 10)
- When the dispenser is equipped with an older EPROM version, replace the EPROM on the control. Required: EPROM version "SAT1 V2.4" or more up to date.
- Unplug the power supply. (see chap. 5K.2)
- Remove the cup carrier.
- Remove the coil of the inlet valve.
- Remove the dummy cap at the right front side of the pot carrier.
- Insert the wirings of the cold water valve (**4**) cable harness S30-NO and S30-C (**5**) into the drip tray at the right front side. (Fig. 10)
- Connect the wirings with the white rocker switch and press the switch into the opening.
- Connect the 6-pole bush BU02 (**7**) of the cold water valve (**4**) cable harness to the plug ST02 (blue) (**6**) on the interface board. (Fig. 10)
- Insert the control and connect the safety thermostat.
- Insert the plug ST09A (**8**) of the 24 V I²C interface (**10**) cable harness into the 2-pole bush BU09 on the control. (Fig. 10)

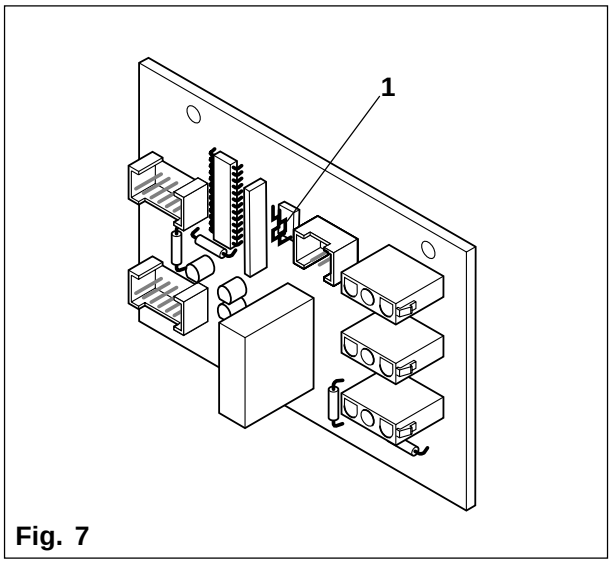


Fig. 7

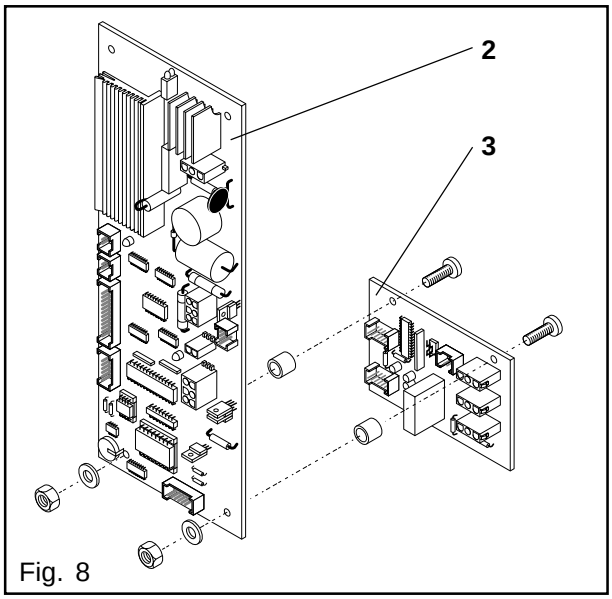


Fig. 8

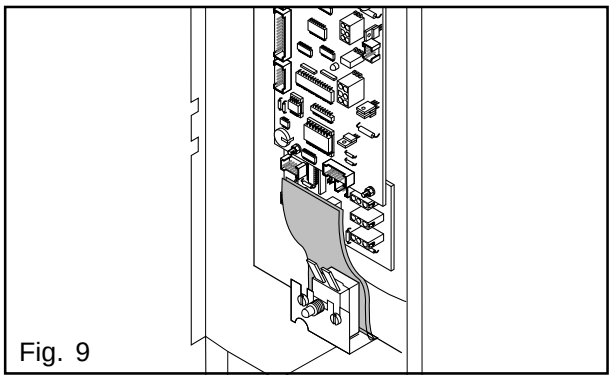


Fig. 9

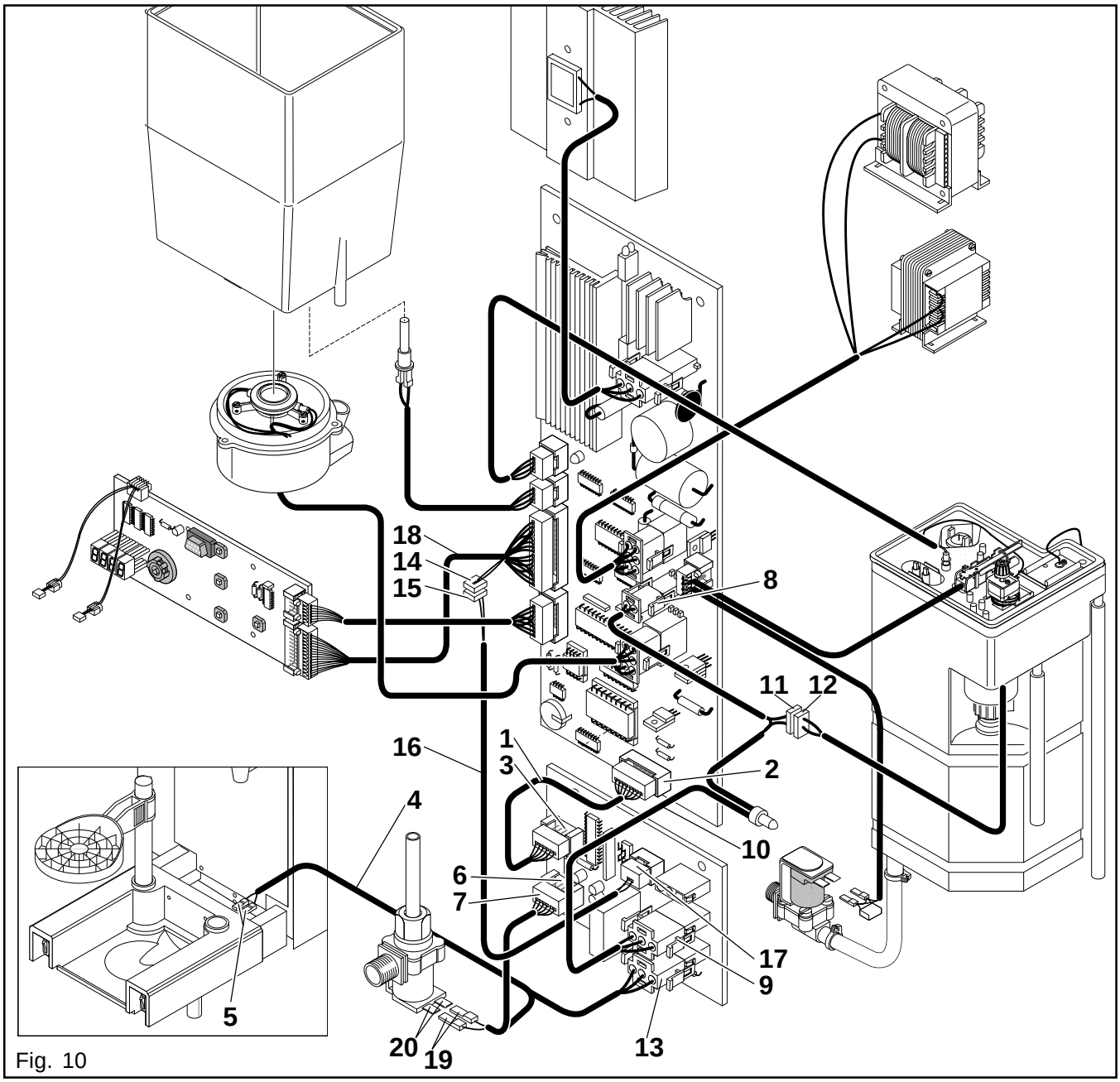


Fig. 10

- Connect the plug ST05 (**9**) of the 24 V I^2C interface (**10**) cable harness to the 3-pole bush Bu05 of the interface board. (Fig. 10)
- Connect the bush BU09A (**11**) of the 24 V I^2C interface (**10**) cable harness to the plug ST09 (**12**) of the water coil. (Fig. 10)
- Connect the plug ST06 (**13**) of the cold water valve (**4**) cable harness to the 3-pole bush BU06 of the interface board. (Fig. 10)
- If no 2-pole plug (**14**) is mounted to the cable harness of the operating panel (**18**) connect the contact bush and the receptacle to the two free terminals of the operating panel cable harness (**18**) as follows (Fig. 10):
  PIN 1 = SAT BU20 / XII
  PIN 2 = SAT BU20 / XIII
- Connect the plug (**14**) to the 2-pole contact bush (**15**) of the adapter cable harness. (Fig. 10)
- Connect the bush BU03 (**17**) of the adapter cable harness (**16**) to the plug ST03 of the interface board. (Fig. 10)
- Connect the flat plugs (**19**) of the cold water valve (**4**) cable harness to the contacts (**20**) of the café cool inlet valve. (Fig. 10)
- Connect all other plugs again.
- Remount the dispenser.

- Insert the café cool button (**1**) into the operating panel. (Fig. 11)
- Mount the external dosing unit. In different countries the external dosing unit is not included in the kit.
- Test the function of the dispenser.
- Programme customer specific adjustments if required. For this purpose remove the upper button cap (**2**) to connect the service device. (Fig. 12)

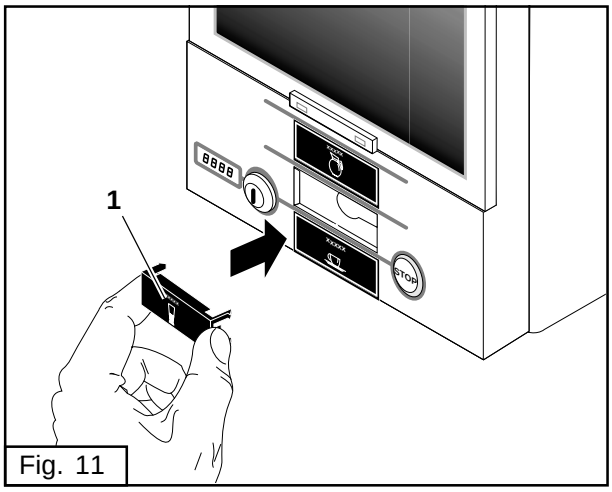


Fig. 11

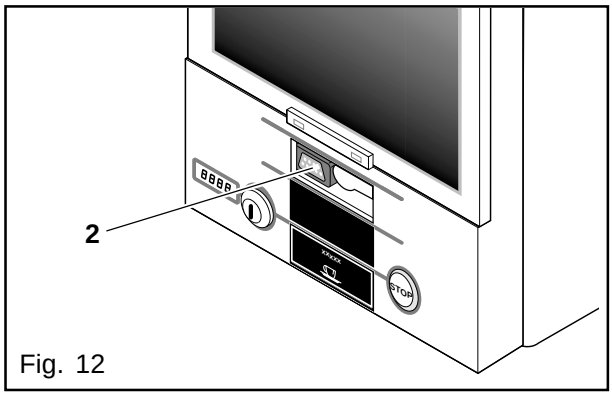


Fig. 12

Delivery of café cool

CAUTION: **Check the drinking water quality before starting the delivery of café cool. Observe the national regulations!**

- Before delivering café cool, even if the dispenser has not been used for a longer time period (e.g. during the night or the weekends), rinse the dispenser once for 1 minute in order to drain residual water from the lines.
- For the rinsing process place a pot (capacity 1500 ml) underneath the outlet. Keep the button (**3**) pressed until 1500 ml have been delivered. (Fig. 13)

Before the delivery of café cool, ice cubes should be filled into the glass.

- Actuate the delivery button (**4**) to deliver café cool. (Fig. 14)
- When the stop button (**5**) is actuated, the delivery is immediately interrupted. (Fig. 14)

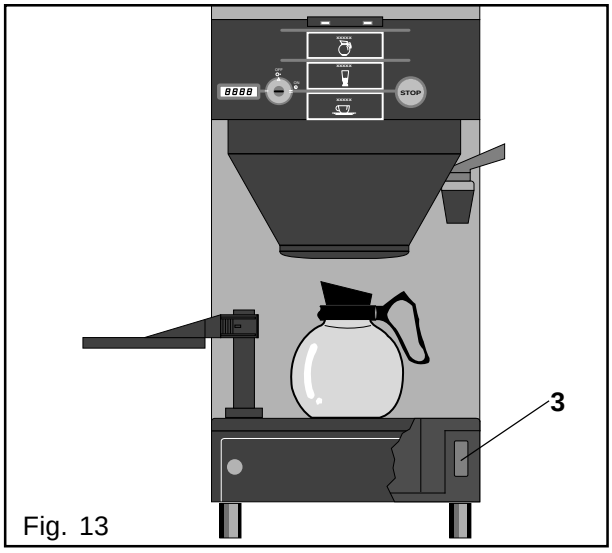


Fig. 13

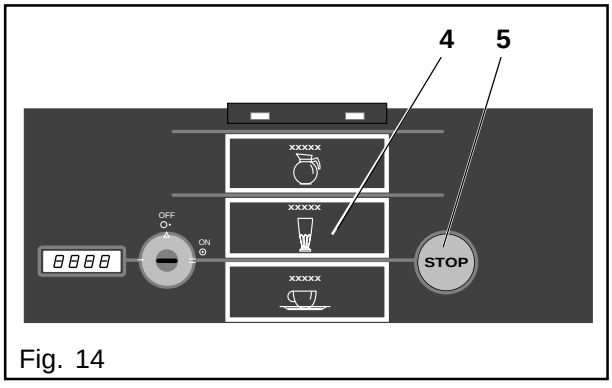
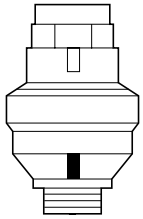
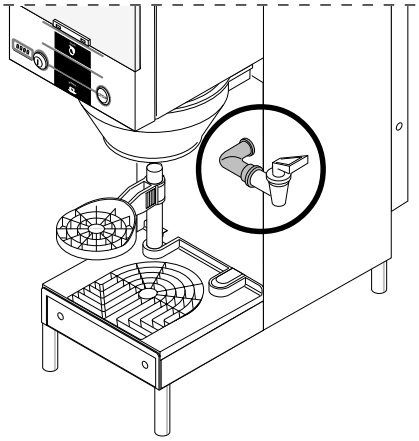


Fig. 14

A.7 Accessories

Overview water system accessories

WHAT:	FOR:	REQUIRED FOR:
Water stop valve	Securing the water supply	
Tank top	Manual filling of the water tank when no water supply line is provided	Kit 'tank top' - Europe Kit 'tank top' - USA
90° angular piece for hot water delivery tap	Delivery of hot water at side wall of the dispenser **WARNING: In this case there is no drip tray underneath the hot water delivery tap.**	
Overflow protection	Overflowing of the boiler caused by a blocked float or defective float switch is avoided	Kit Overflow protection

A.7.1 Tank Top

- When no water supply connection is provided or the drinking water quality is bad, the dispenser can be retrofitted with a tank to fill in the water manually.

WARNING: Only use drinking water for filling the tank. Fill in fresh drinking water daily.

Water system

- The function of the water system is identical to that of the standard system (see fig. 1).

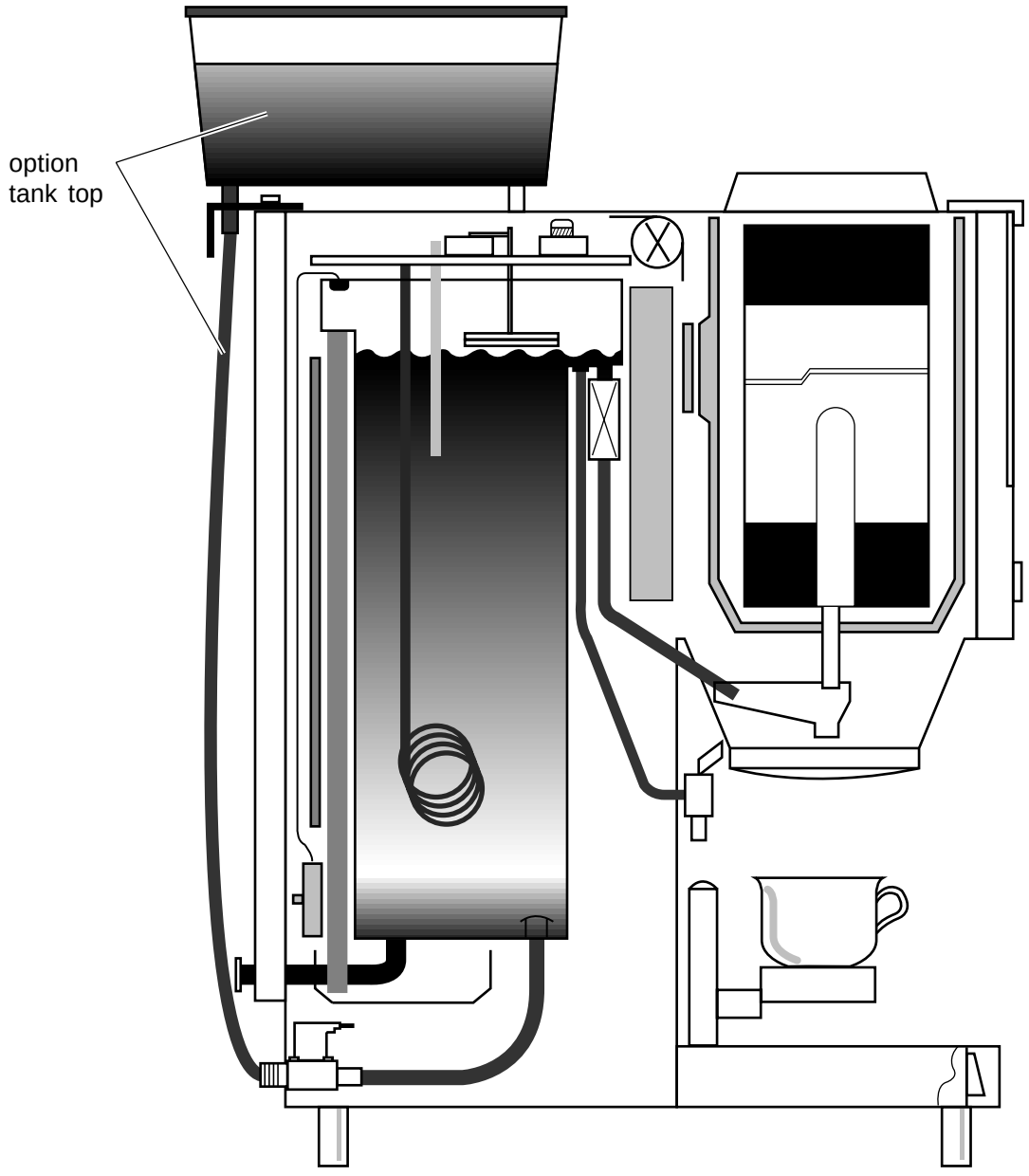


Fig. 1

Water system tank top

General remarks:

- The boiler is filled with water from the tank via a hose connection at the rear wall of the dispenser and a special inlet valve.
- Before the dispenser is transported, the water must always be drained from the boiler.
- The water can be drained from the boiler from outside by using a special hose.
- The retrofitted dispenser is equipped with a heating switch at the rear wall.
- When filling the boiler for the first time, the heating must be switched off. This prevents the dry running protection being activated as the filling process via the tank takes longer than filling via the standard inlet valve with the pressure of the water supply line.
- The heating must also be switched off every time the boiler is to be filled after the water has been drained completely from the boiler, e.g. for transport or repair.

Installation of the kit 'tank top'
This description is based on the consideration that the dispenser was connected to the water supply and ready for operation before.

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Loosen the screw (**2**) and remove the operating panel cover (**1**). (Fig. 2)
- Remove the front cover and the advertising panel (**3**) towards the side. (Fig. 2)

CAUTION: When the front cover is made of glass, there is the danger of being injured due to incorrect handling or breaking of the glass.

- Remove the cooling compartment lid (**4**). (Fig. 2)
- Remove the housing cover (**6**). (Fig. 2)
- Remove the air duct (**7**). (Fig. 1)
- Remove the rear wall (**5**). (Fig. 2)
- Drain the water from the boiler.

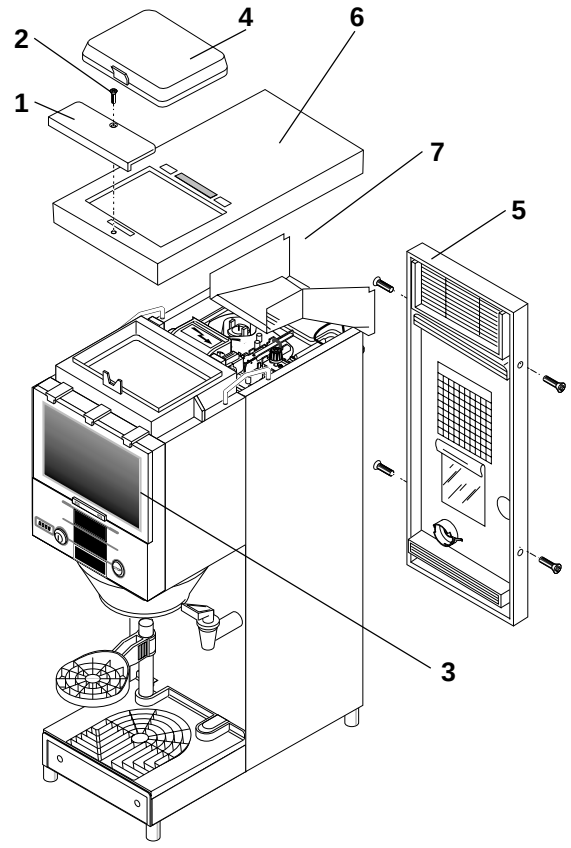


Fig. 2

Installation:

- Disconnect the plug connection S05/A (**8**) from the main cable harness of the dry running protection. (Fig. 3)
- Remove the cable binder from the main cable harness and pull the plug connection S05/A to the rear of the dispenser.
- Disconnect the plug connection S06/2 (**9**) of the main cable harness from the thermostat. (Fig. 3)
- Connect the plug adapter (kit 'tank top') to the free thermostat contact.
- Connect the plug connections S06/2 of the main cable harness and E01/B of the water tank switch cable harness (kit 'tank top') to the plug adapter.
- Connect the plug connection S05/A of the water tank switch cable harness (kit 'tank top') to the free dry running protection contact.
- Remove the inlet valve. (see corresponding chapter)
  - Place a cloth below in order to collect water from the valve.

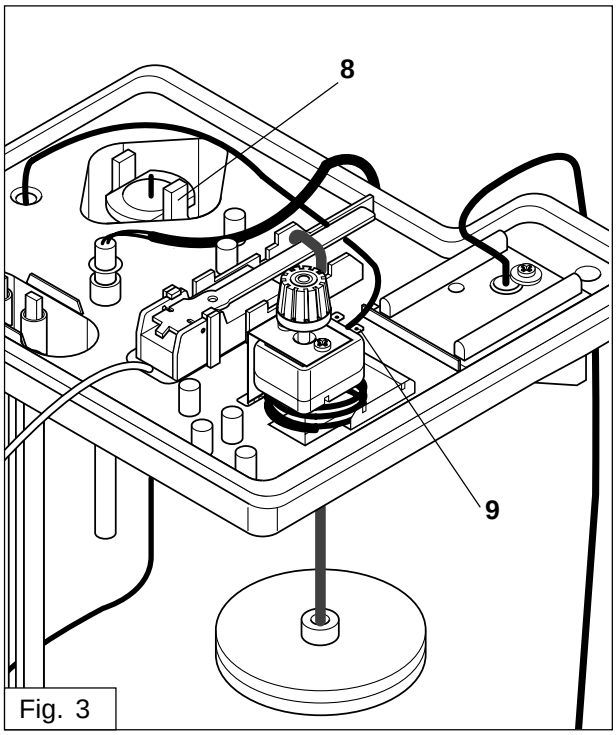


Fig. 3

- Remove the water outlet hose from the boiler base.
- Mount the shorter hose (**1**) included in the kit 'tank top' to the boiler base outlet to empty the boiler. (Fig. 4)
- Mount the solenoid valve (**2**) (of kit 'tank top') in the same way as the standard inlet valve. (Fig. 4)
- Mount the air duct.
- Mount the housing cover.

CAUTION: Make sure to connect the ground connection to the housing cover.

When the dispenser is equipped with a heating plate in the housing cover, replace the housing cover with heating plate by the housing cover included in the kit 'tank top'. Replace the heating plate switch at the right front side of the pot carrier (see corresponding chapter) by the dummy cap (included in kit 'tank top').

- Mount the rear wall (included in kit 'tank top'):
  - Insert the water outlet hose into the round opening (**3**) at the bottom of the rear wall. (Fig. 4)
  - Guide the plug connections S05/A (**6**) of the main cable harness (former dry running protection), S03/2 and S03/3 (**7**) of the water tank switch cable harness through the square opening (**4**) in the middle of the rear wall. (Fig. 4)
  - Fasten the rear wall.
- Connect the plug connection S05/A of the main cable harness (former dry running protection) to PIN 1 of the switch (**5**) (kit 'tank top'). (Fig. 4)
- Connect the plug connections S03/2 to PIN 2 and S03/3 (**7**) to PIN 3 of the switch. (Fig. 4)
- Mount the heating switch to the rear wall.

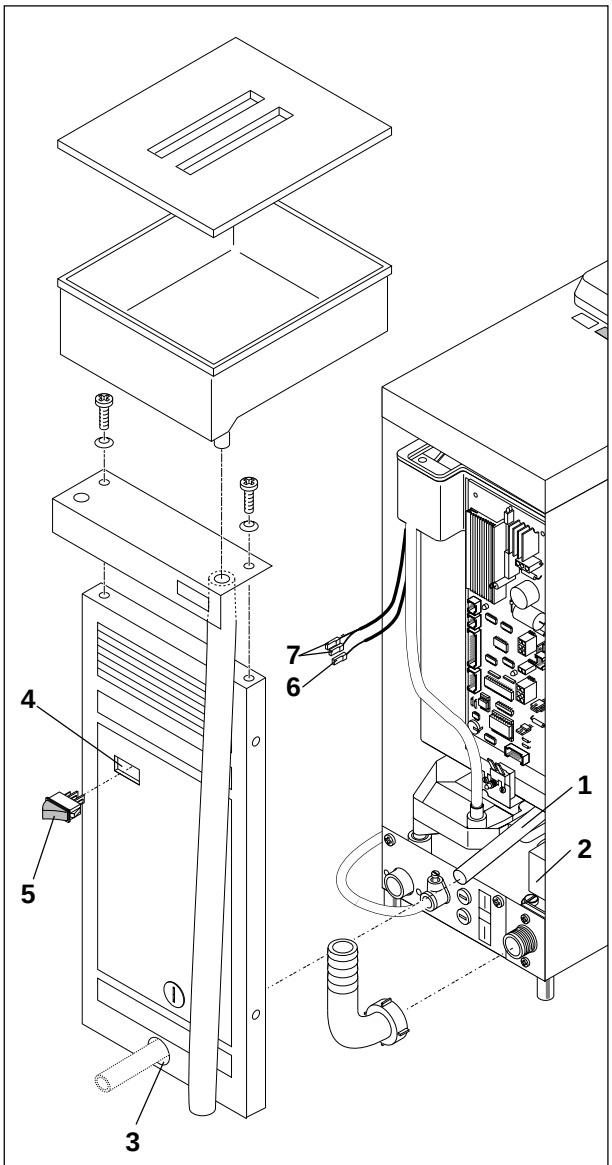


Fig. 4

- Close the boiler drainage hose by means of the hose clamp and the plug (**1**). (Fig. 5)
- Mount the tank support (included in kit 'tank top') (**2**) to the rear wall as shown in fig.5. (Fig. 5)
- Place the tank (included in kit 'tank top') on the housing cover as shown in fig. 5.
- Connect the longer hose included in the kit 'tank top' as an outlet hose to the outlet opening (**3**) of the tank and to the angular piece (**4**) (included in kit 'tank top'). (Fig. 5)
- Fasten the angular piece to the valve.
- Switch on the dispenser with the main switch.

CAUTION: **Make sure that the heating switch (3) at the rear wall of the dispenser is switched <u>off</u>, otherwise the dry running protection would be activated.**

- Fill the tank with water (drinking water quality) until the water reaches the maximum mark in the tank (approx. 10 l).
- Close the tank.
- Switch on the heating switch (**5**) and carry out a functional test. (Fig. 5)

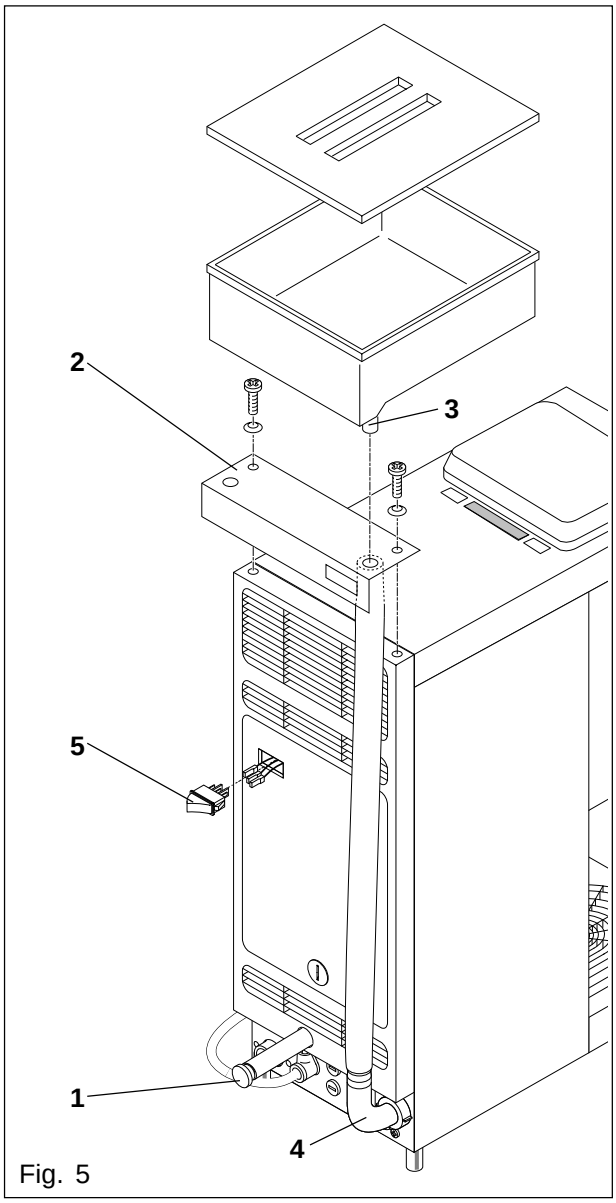


Fig. 5

A.7.2 Installation of the Kit Water Tank

General Notes:

- The kit must only be installed by qualified service technicians.
- The parts must be cleaned before the installation of the kit.
- Remove the packaging of the pump unit before the tank is filled.
- If there is no water connection available or the drinking water is of bad quality, the tank of the dispenser can be modified for manual filling.

WARNING: Check the quality of the drinking water before installing the kit.

WARNING: The tank may only be filled with drinking water. The drinking water has to be changed daily.

WARNING: The water tank may not be exposed to sun-rays.

CAUTION: The water tank as well as the pump unit have to be cleaned daily.

- The boiler is filled from the tank via a hose connection on the rear side of the dispenser.
- When filling the boiler for the first time, the heating must be switched off by means of the switch (**1**) on the rear wall, in order to prevent the actuation of the dry running protection, which would be caused, since the filling of the boiler by means of the tank is slower than by means of the standard inlet valve with water pipe pressure. (Fig. 1)
- If 'cafe cool' shall be delivered, the kit water tank cannot be installed.

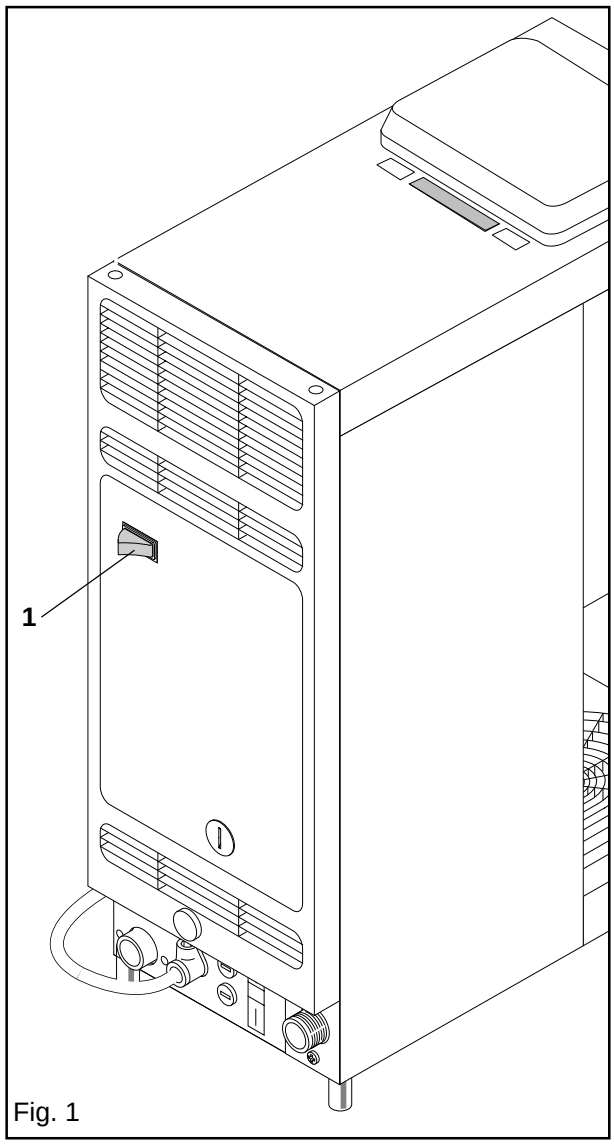


Fig. 1

Installation:

This description provides that the dispenser was connected to the water supply and ready for operation.

Preparation:

- Switch off the dispenser and unplug the power supply.
- Disconnect the dispenser from the water supply.
- Loosen the screw (**2**) and remove the cover (**1**) of the operating panel. (Fig. 2)
- Remove the cooling compartment lid (**3**). (Fig. 2)
- Remove the old back panel (**4**). (Fig. 2)
- Remove the housing cover (**5**). (Fig. 2)
- Remove the air duct (**6**). (Fig. 2)
- Pull the rear side of the dispenser to the edge of the table or counter. (Fig. 3)

ATTENTION: Danger of tipping!

- Put a container of sufficient size (10 ltr. bucket) underneath. (Fig. 2)

ATTENTION: Danger of being scalded by hot water.

ATTENTION: Observe that the circuit board does not come into contact with water.

- Pull the drain tube (**7**) out of the boiler and hold it above the container. (Fig. 3)
- Pull out the plug (**8**). (Fig. 3)
- Drain the entire water.

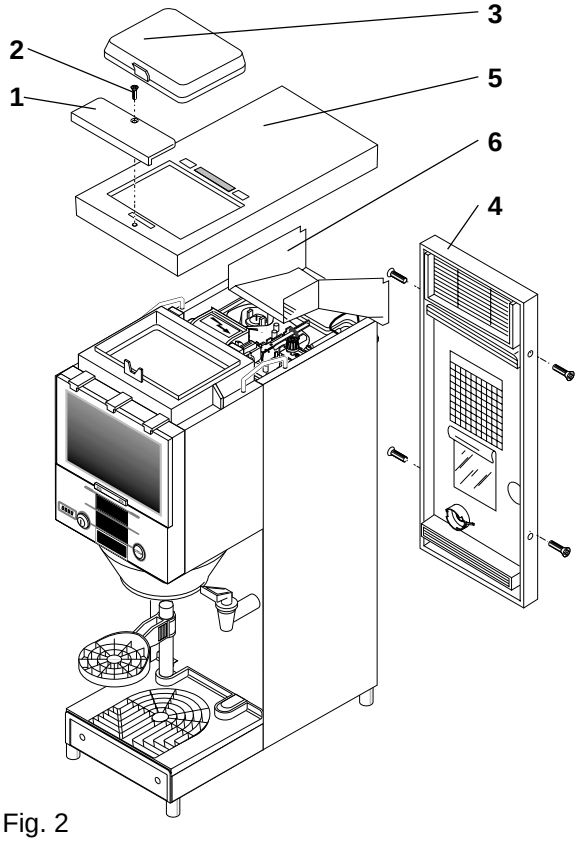


Fig. 2

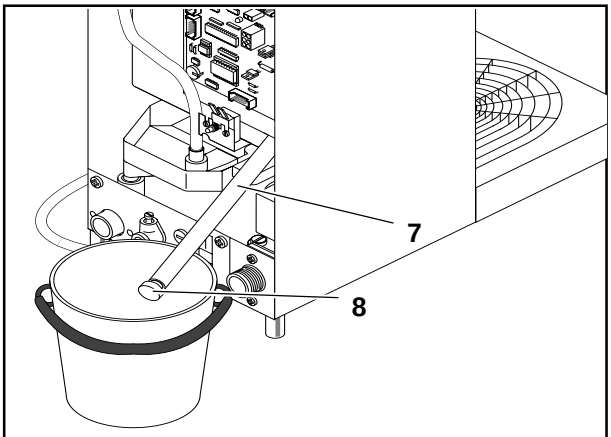


Fig. 3

- As water can be left in the drain tube, hold the container underneath the hot water delivery cock (**1**). (Fig. 4)
- Open the hot water delivery cock (**1**) and drain the remaining water. (Fig. 4)
- Make sure that the thermostat (**2**) was turned to zero (counter-clockwise up to the stop, heating off). (Fig. 5)

ATTENTION: If the thermostat is not turned to zero, the dispenser starts heating and actuates the capillary tube limiter.

- Loosen and remove the screws (**3**) of the inlet valve (**4**). (Fig. 6, 7)
- Push the inlet valve out of its seat and pull it off.
- Disconnect all contacts of the cable harness (**5**) from the inlet valve. (Fig. 7)
- Remove the clip from the tube.
- Pull off the tube (**6**) from the inlet valve (**4**). (Fig. 7)

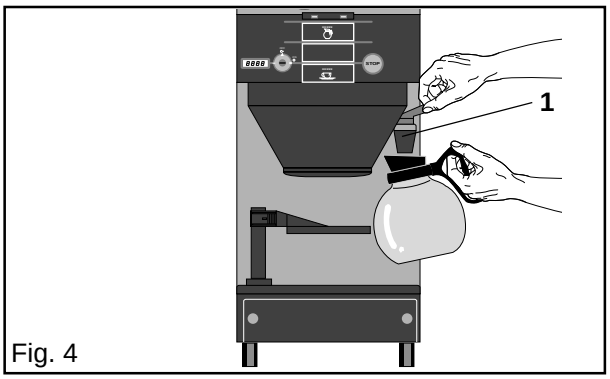


Fig. 4

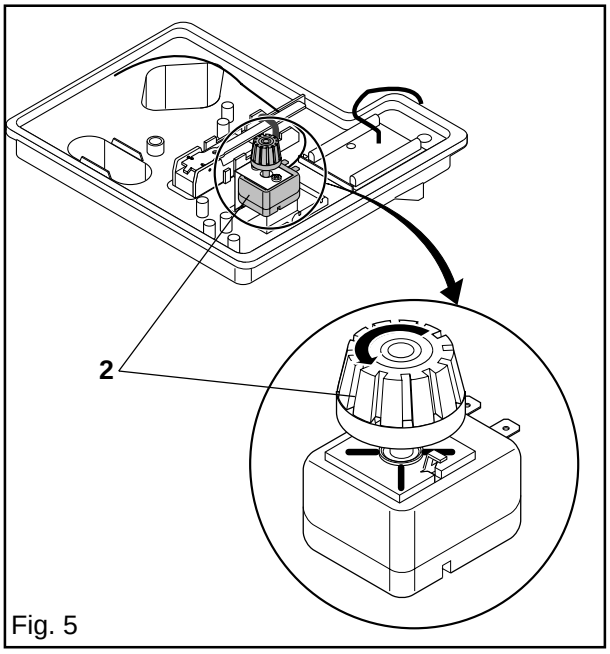


Fig. 5

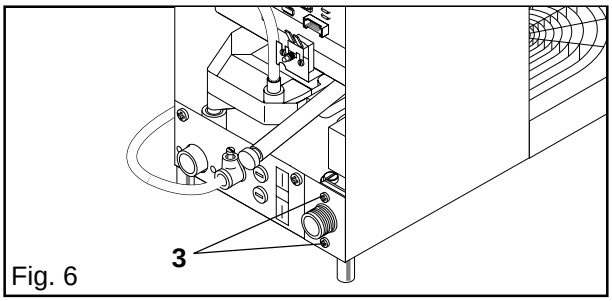


Fig. 6

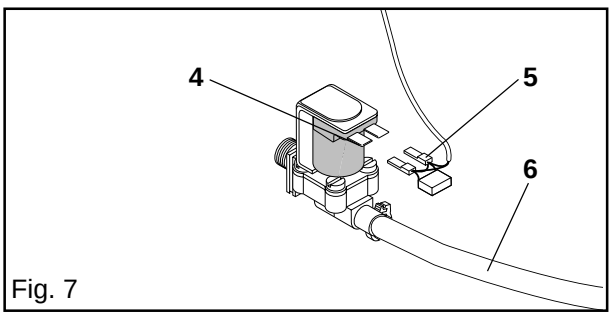


Fig. 7

- Push a clip onto the hose of the inlet valve (do not fasten it).
- Insert the pre-mounted hose coupling (**1**) together with the cable harness into the opening of the housing, and connect the hose coupling (**1**) – inside the dispenser – to the inlet tube (**2**) of the boiler. (Fig. 8)
- Secure the inlet tube (**2**) and the hose coupling (**1**) by means of the clip.
- Insert 1-2 ribs of the corrugated hose (**3**) into the opening of the housing. (Fig. 9)
- Connect the cable harness of the pump unit (**4**) to the rectifier. (Fig. 10)

ATTENTION: Observe the marks! (Fig. 10)

- Connect the cable harness of the inlet valve to the rectifier. (~)

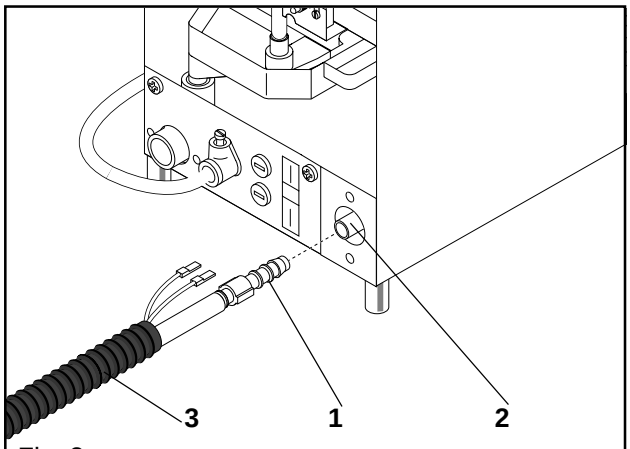


Fig. 8

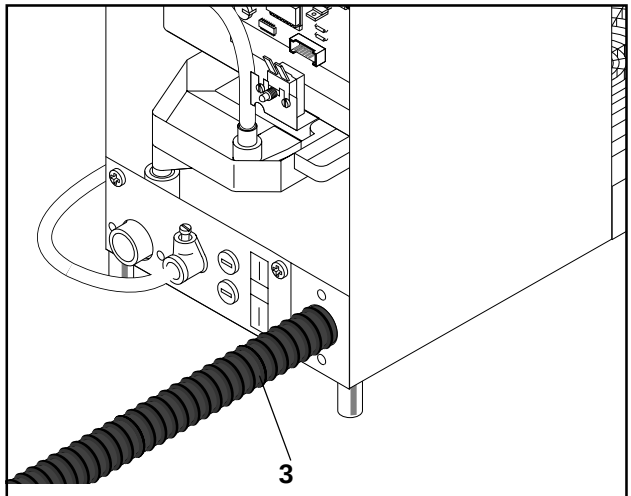


Fig. 9

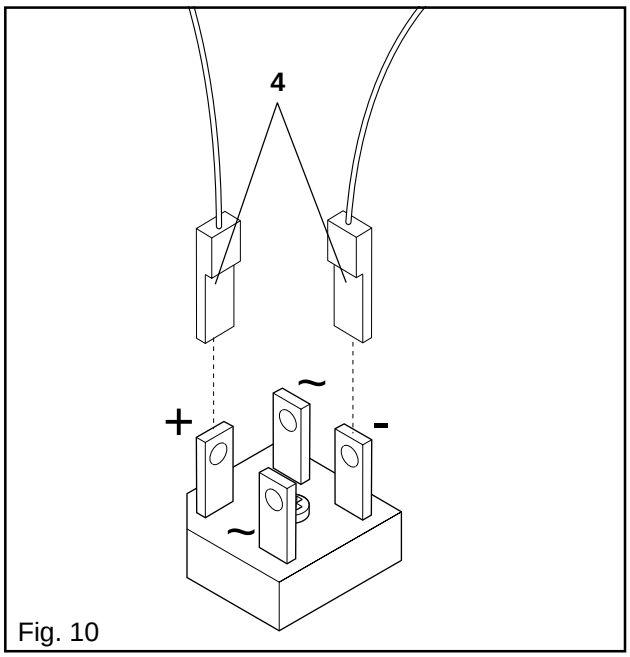


Fig. 10

- Slightly loosen the screws (**1**) of the thermostat holder. (Fig. 11)
- Slide the pre-mounted support of the rectifier (**2**) underneath the lock washers, and fasten the screws (**1**). (Fig. 12)
- Disconnect the plug connection S05/A (**3**) from the main cable harness of the dry running protection. (Fig. 13)
- Remove the cable binder from the main cable harness and pull the plug connection S05/A to the rear of the dispenser.
- Disconnect the plug connection S06/2 (**4**) of the main cable harness from the thermostat. (Fig. 13)
- Connect the plug adapter (D-0258) to the free thermostat contact.
- Connect the plug connections S06/2 of the main cable harness and E01/B of the cable harness switch (G-4973) to the plug adapter.
- Connect the plug connection S05/A of the cable harness switch (G-4973) to the free dry running protection contact.
- Turn the thermostat clockwise up to the stop of the maximum temperature 95°C. (Heating on)

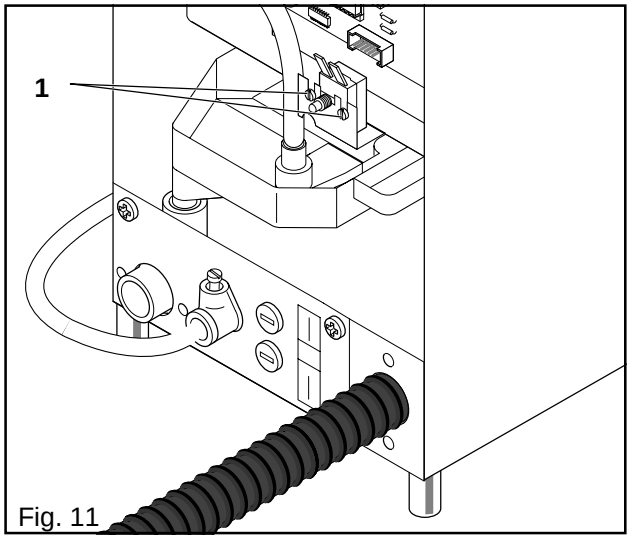


Fig. 11

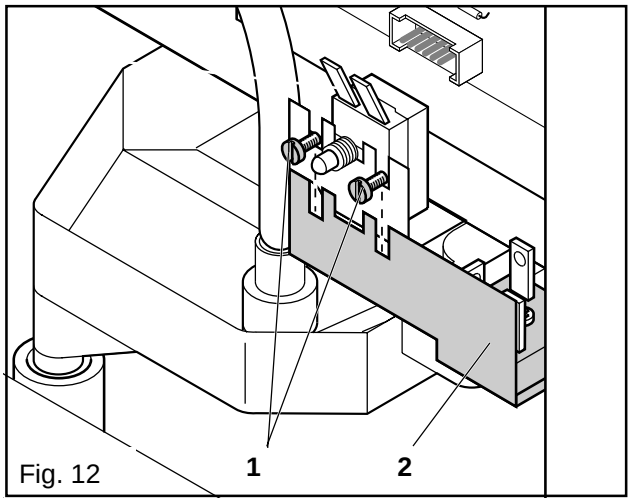


Fig. 12

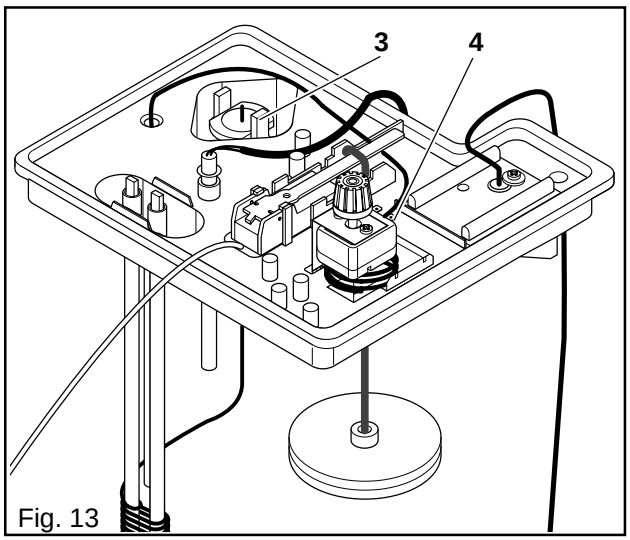


Fig. 13

- Mount the air duct.
- Mount the housing cover .

CAUTION: **Make sure to connect the ground connection to the housing cover.**

- Guide the plug connections S05/A (**1**) of the main cable harness (former dry running protection), S03/2 and S03/3 (**2**) of the cable harness switch through the square opening (**3**) of the rear wall. (Fig. 14)
- Fasten the new rear wall. (Kit water tank)
- Connect the plug connection S05/A of the main cable harness (former dry running protection) to PIN 1 of the switch (**4**). (Fig. 14)
- Connect the plug connections S03/2 to PIN 2 and S03/3 (**2**) to PIN 3 of the switch (**3**).
  (Fig. 14)
- Mount the heating switch to the rear wall.
- Reconnect the power plug.

CAUTION: **Make sure that the heating switch (2) at the rear wall of the dispenser is switched <u>off</u>, otherwise the dry running protection would be activated. (Fig. 14)**

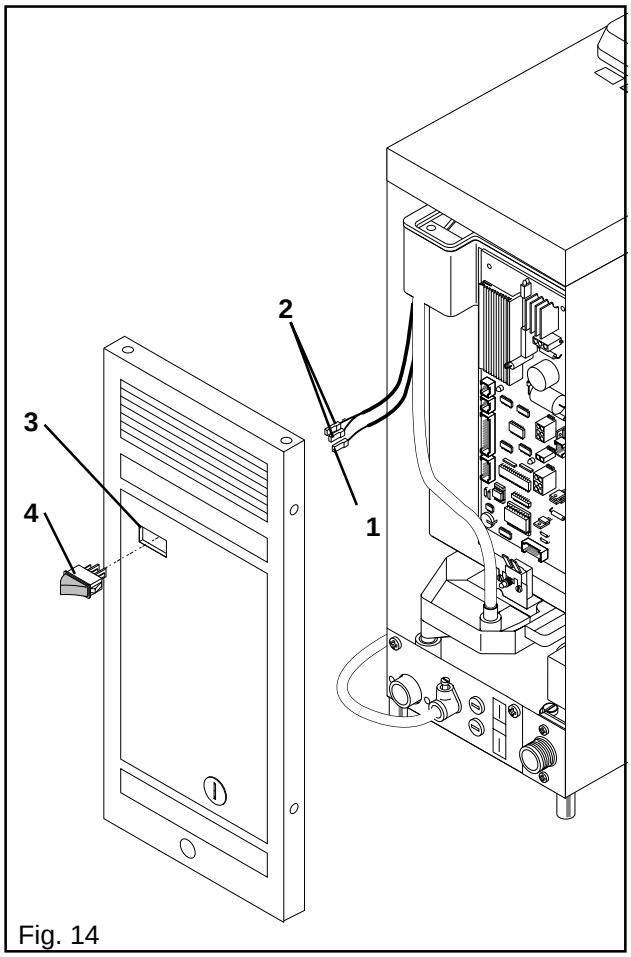


Fig. 14

- Switch on the power switch (**5**), and wait until the boiler is filled and the float switch switches off. (Fig. 15)

ATTENTION: **Do not touch any parts that are voltage-supplied.**

ATTENTION: **Check whether the pump unit draws water. If not, slightly press the hoses in order to generate a pumping movement.**

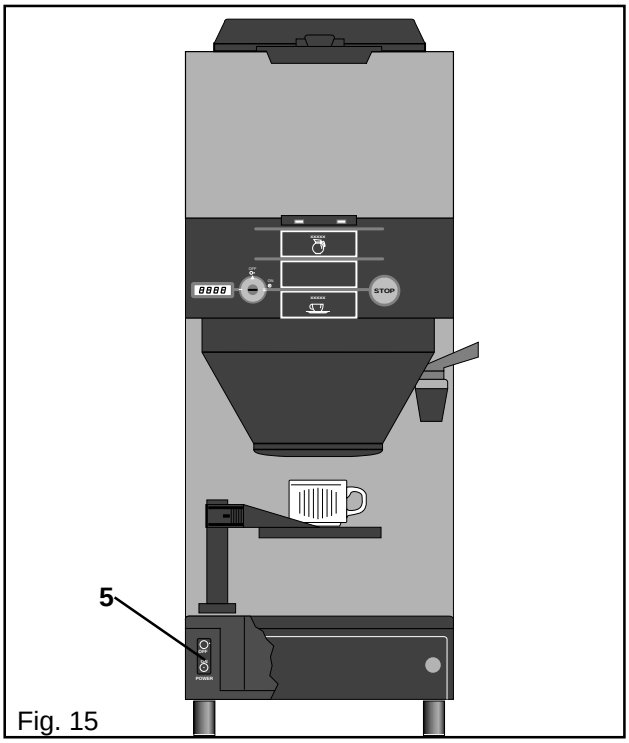


Fig. 15

- Fill drinking water into the water tank (approx. 19 ltr.).
- Tightly fasten the helical ring (**1**). (Fig. 16)

ATTENTION: The pump unit may only slightly but not totally rest on the bottom of the water tank.

- Fill the tank with water (drinking water quality).
- Close the tank.
- Switch on the heating switch (**2**) and carry out a functional test. (Fig. 17)
- If the water in the tank is used up, the reed switch has to switch off the pump unit, in order to prevent damages.

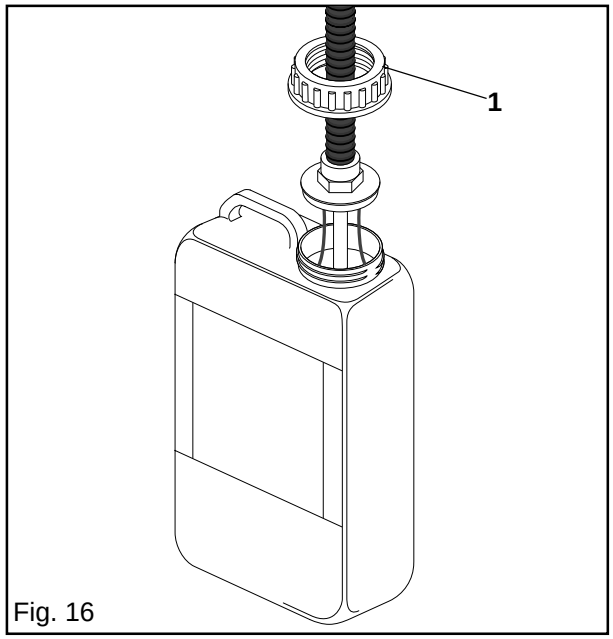


Fig. 16

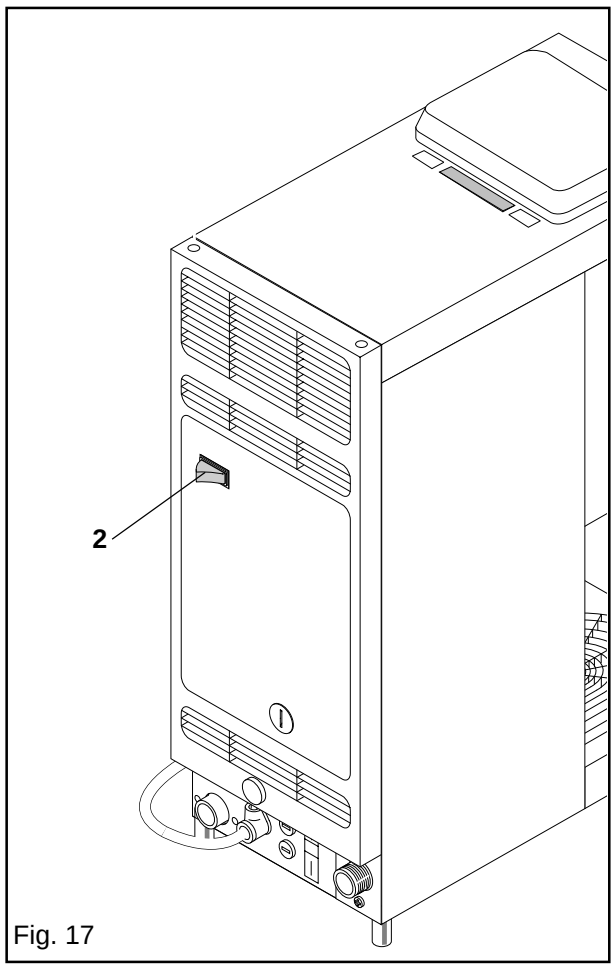


Fig. 17

A.7.3 Kit Overflow protection

- The overflowing of the boiler can be prevented, in cases where the float switch is faulty, by installing the new "Overflow Protection" kit.
- This kit contains a circuit board including a time switch, which is connected to the inlet valve. The time switch can be variably adjusted using a jumper on the circuit board. (Fig. 1)
- The time switch is used to measure the period of time during which the inlet valve is in its opened state. As soon as the pre-set period of time is exceeded, the time switch will trip and the inlet valve will be closed.
  Whenever the time switch has tripped, this will be signalled to the user by means of a constant beep sound.
  Operating the main switch can reset both the time switch and the signal sound.

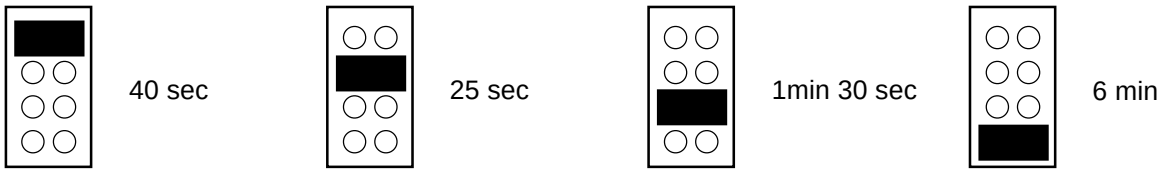


Fig. 1

Installation of the kit Overflow protection

- Switch off the dispenser by means of the main switch, disconnect the power supply plug, and close the water cock.

CAUTION: In order to prevent damage to the PC boards and their components due to electrostatic charge, first touch a metal table or a metal cupboard before touching the PC boards.

- Disassemble the dispenser's control (see chap. 5K.2).
- Fasten the distance piece (**1**) and nut (**2**) from the 'Overflow Protection' kit onto the control unit. (Fig. 2)
- Plug the insulating foil (**8**) and the circuit board including the timer (**3**) into the distance piece (**1**). (Fig. 3)
- Loosen the cable harness inlet valve/float switch from the electrical connection ST03 (**4**) and connect to the electrical connection on the time switch (**5**). (Fig. 3)
- Connect the cable harness (**6**) to the electrical connection ST03 (**4**). (Fig. 3)
- The position of the jumper (**7**) determines when the water inlet in the boiler stops. (Fig. 3)
  See also the positioning diagram on the previous page.

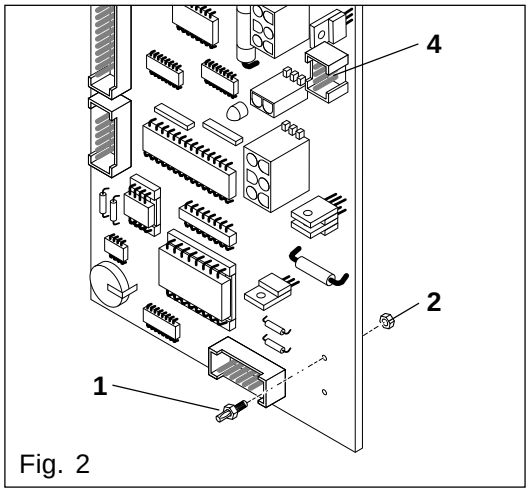


Fig. 2

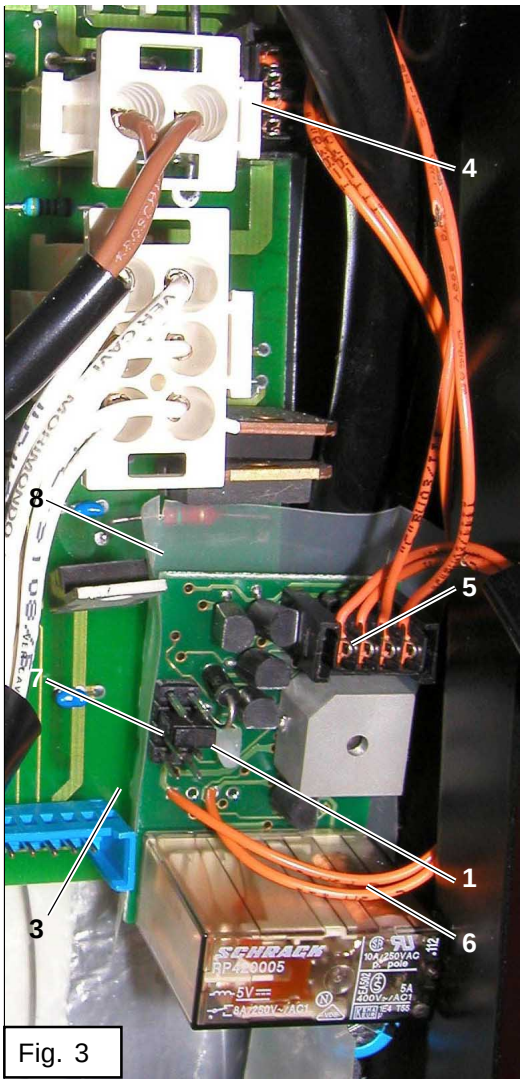


Fig. 3

For Cafitesse 100 dispensers with an already built-in I²C-bus circuit board (Cafitesse 120 or with café cool option), the circuit board is installed the same way.

When the boiler is being filled for the first time, it is possible that the time switch will trip and that the inlet valve will close if the time switch has been set to 40 sec. or less. In this case, the main switch must be operated in order to be able to continue filling the boiler.

Whenever filling the boiler takes a very long time due to low water pressure, it is possible that the timer will trip and that the inlet valve will close before the filling operation has been completed.

The shorter that the period of time that the time switch has been set to is, the less amount of water that can then flow over whenever the float becomes caught inside the boiler or the float switch is defective.

B Brewing System

Not available

C Dosing System

C.1 Adjustments

Not required

C.2 Disassemblies

C.2.1 Disassembly of the B2 Coil and the Diode Carrier

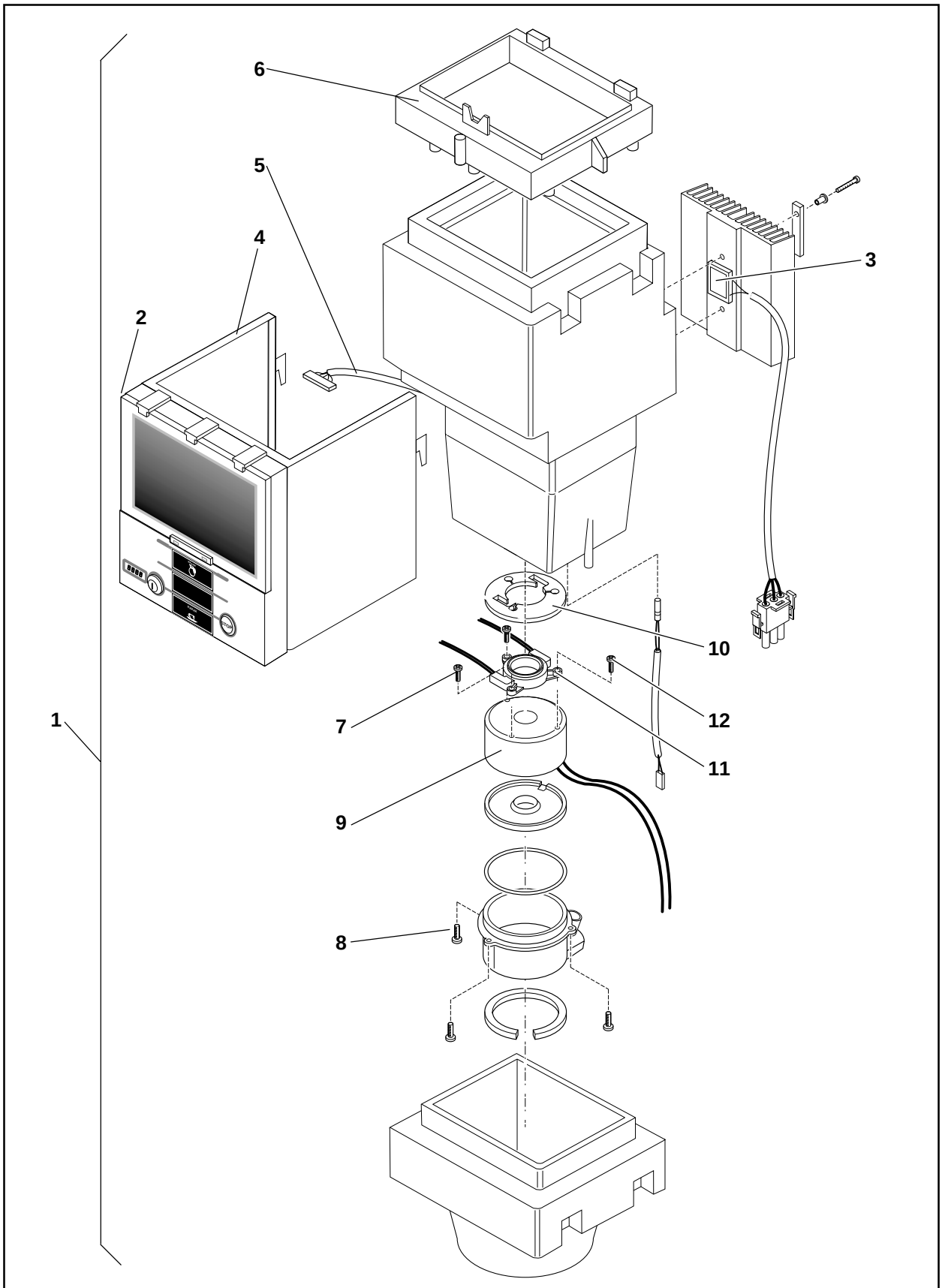


Fig. 1

Preparation:

- Disconnect the dispenser from the mains supply and close the water tap.
- Dismount the front part (**1**). (Fig.1) (see chap. 5G.2)

CAUTION: **When the front panel (2) is made of glass, there is a danger of being injured due to rupture of the glass. (Fig. 1)**

CAUTION: **<u>The Peltier element (3) must not be damaged.</u>**
Ensure that the cooling compartment is not placed on top of the Peltier element. Do not dismount the Peltier element. (Fig. 1)

- Withdraw the sheet metal housing (**4**) from the cooling compartment insulation. At the same time disconnect the cable harness (**5**) from the pc board. (Fig. 1)
- Remove the cooling compartment frame (**6**). (Fig. 1)

Disassembly of the B2 coil

- Remove the cellular sealing (**7**). (Fig. 1)
- Loosen the screws (**8**) and remove the screened coil. (Fig. 1)
- Carefully remove the B2 coil (**9**) towards the top, by carefully moving the cables. (Fig.1)
- If necessary remove the insulation ring (**10**) and the empty detection (**11**). (Fig.1)

CAUTION: **When remounting:**
- **It must be observed that the sealings are positioned correctly.**
- **For a better mounting, place the o-ring on the cooling compartment.**

When remounting the screened coil, insert the 3 screws (12). (Fig. 1)
After the assembly, ensure that the screened coil is positioned evenly on the cooling compartment.

Disassembly of the empty detection

- Remove the insulation ring (**10**). (Fig. 1)
- Remove the 3 screws (**12**). (Fig. 1)

CAUTION: **When remounting, ensure that:**
- **the screws M4x8 mm (12) are inserted.**
  Longer screws (even when they are only 2 mm longer) will lead to malfunctions. (Fig. 1)
- **the insulation ring is placed onto the empty detection (11). (Fig. 1)**
- **the foam rubber sealing is mounted to the console for screened coil.**
- **that the cables are installed next to the empty detection and not underneath it.**
  Wrong installation of the cables can lead to dosing errors.

CAUTION: **When mounting, ensure that the empty detection is in the correct position.**

If replacing the empty detection in dispensers with an older empty detection, the complete 'empty detection inc. screws' assembly must be installed. (see spare parts list)
It is essential that screws with a flange are used.

CAUTION: **When replacing the empty detection the screws must be fastened carefully in order to prevent deformation of the plastic housing.**

C.2.2 Disassembly of the Mixer and Mixer Motor

Preparation:

- Disconnect the dispenser from the mains supply and from the water supply.
- Drain the water from the boiler.
- Place a container underneath the outlet for hot water and empty the residual water from the tap.

WARNING: There is the danger of being scalded by hot water.

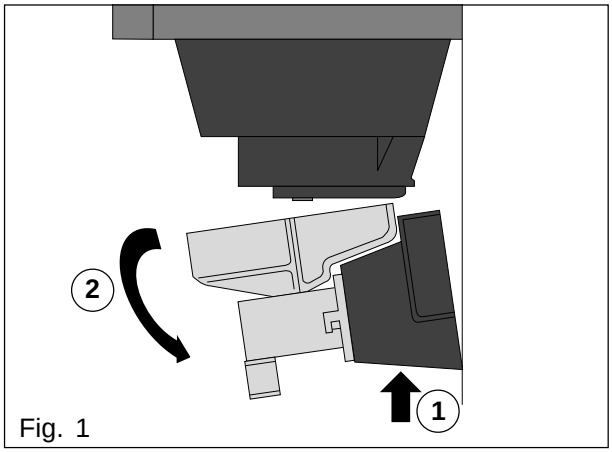


Fig. 1

Disassembly of the mixer unit

- Remove the shielding cover.
- Press the bottom edge of the mixer support (**1**) upwards and tilt the mixer unit (**2**) towards the front (Fig. 1).
- Withdraw the sieve housing (**4**). (Fig. 2)
- Remove the mixing funnel towards the top (**1**). (Fig. 2)
- Turn the mixing container (**5**) to the right and withdraw it towards the front. (Fig. 2)

WARNING: There is the risk of being injured by sharp plastic edges!

- Remove the impeller (**3**) and the spacer ring (**2**) towards the front. (Fig. 2)

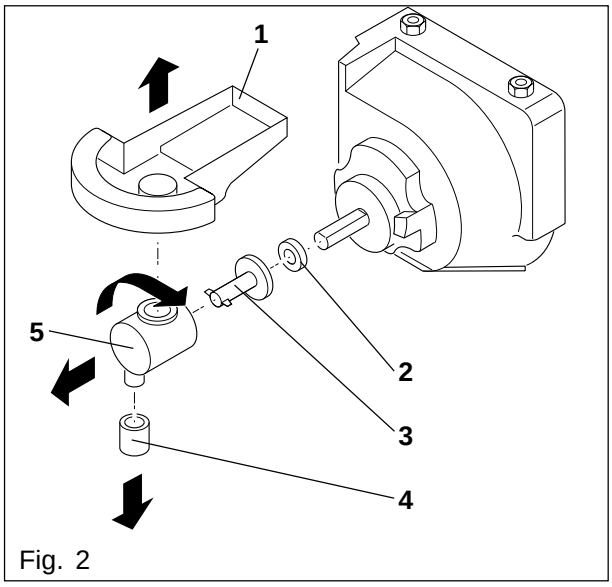


Fig. 2

Disassembly of the mixer motor

CAUTION: Never loosen the two screws (1) first! (Fig. 3)

- Remove the two nuts (**2**) as well as the lock washers and the washers. (Fig. 3)
- Remove the mixer motor (**3**) together with the motor support (**4**) completely. (Fig. 3)
- Remove the switch (**5**) from the motor support. (Fig. 3)
- Disconnect the electrical connections.
- Remove the flange (**6**). (Loosen 2 screws) (Fig. 3)
- Remove the motor support (**4**). (Fig. 3)
- Loosen 2 screws (**7**) at the flange of the mixer motor. (Fig. 4)
- Withdraw the o-ring (**8**). Place it on the new motor if required. (Fig. 4)
- Replace the mixer motor (**9**). (Fig. 4)

When replacing the mixer motor, it is recommended to replace the sealing (**10**) as well. For this purpose the adjusting nut (**11**) must be removed. (Fig. 4)

CAUTION: When inserting the sealing (10) observe that
- **the sealing is inserted as shown in fig. 4.**
- **the adjusting nut (11) is fastened until the limit.**

When mounting the mixer motor, ensure that the cable harness is placed correctly behind the splash panel.

- When mounting the mixer motor, observe that the o-ring (**8**) must be positioned approx. 2 mm away from the mixer motor flange. (Fig. 4)
- Remount the dispenser completely and carry out a functional test.

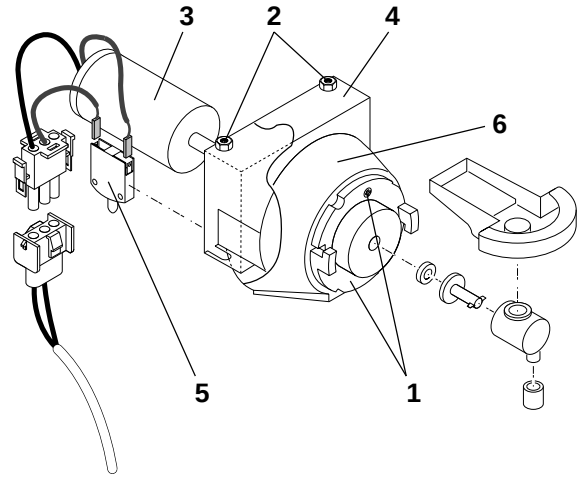


Fig. 3

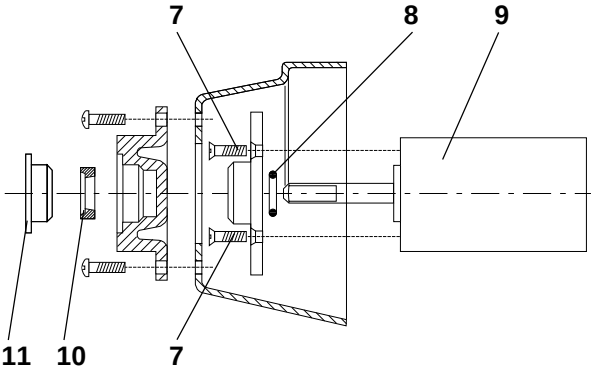


Fig. 4

C.3 Functional Descriptions

C.3.1 Total Overview of the Dosing System

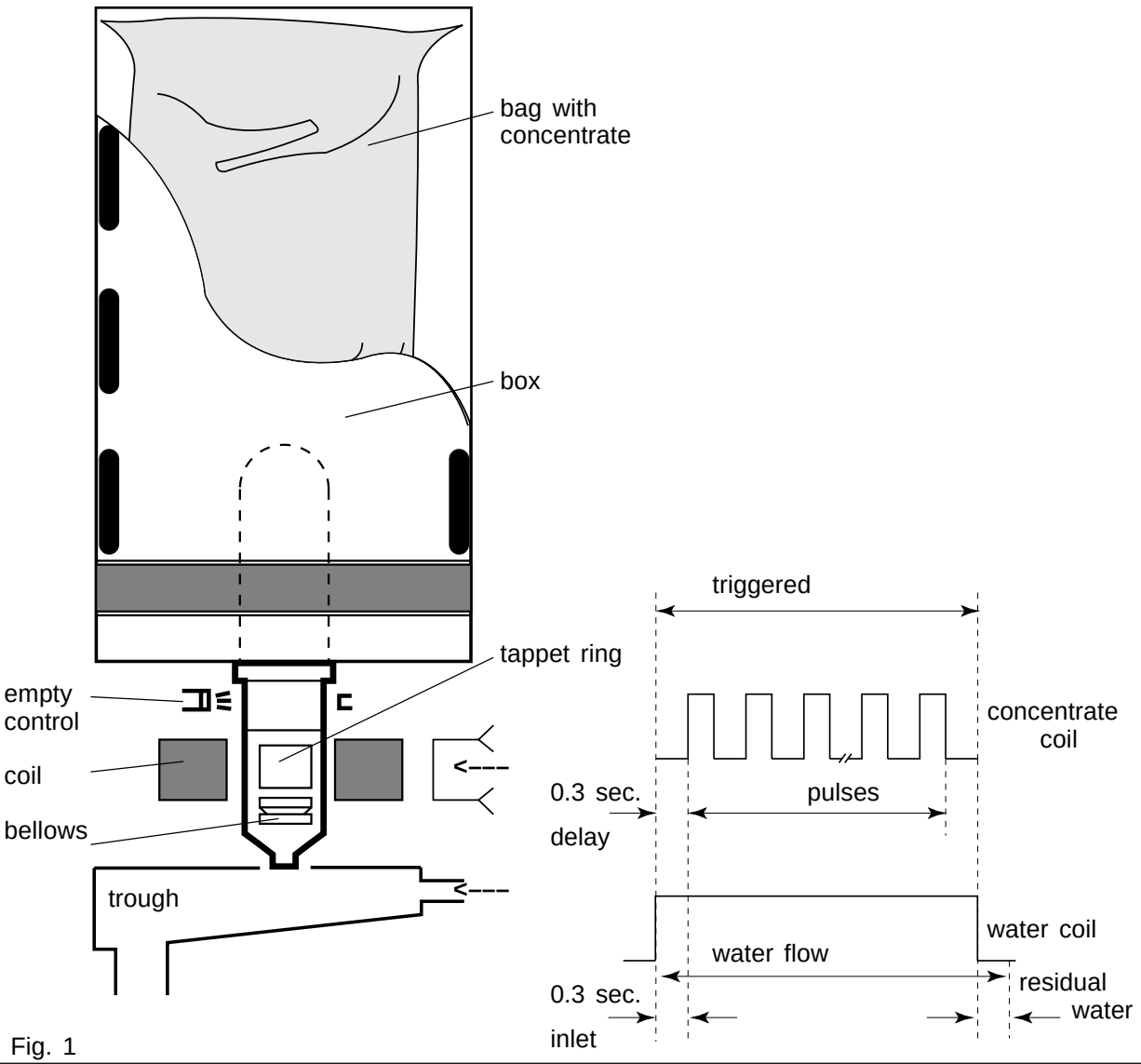


Fig. 1

C.3.2 Function: Flexi Dosing System

- Every **flexi-pack** is a non-returnable pack. It consists of a cardboard box (**1**) and a unit containing the concentrate bag (**2**) and the dosing pump (**3**) (fig. 1).

- The dosing pump cannot be taken apart.

- Concentrate bag and dosing pump form a closed system into which no air from outside can penetrate.
  Due to this system and by inserting the flexi-pack into the cooling compartment

  - no bacteria contained in the air can enter the concentrate.

  - for coffee the durability and the quality of the concentrate can be guaranteed at 6 °C (43 °F) for up to 3 weeks.

- The cooling compartment can be equipped with 1 flexi-pack. There is a **dosing coil** for the flexi-pack underneath the cooling compartment into which the dosing tube (**1**) with dosing pump reaches (fig. 2).

- The dosing coil and the dosing pump form a system which is current-controlled from the microprocessor on the **control circuit board**. The dosing pump delivers

  - for coffee 0.105 ccm

  contrate volume per pulse to the dosing coil. Delivery is done as follows:
  The tappet consisting of tappet ring (**4**), ring carrier (**3**) and inlet valve (**5**) is pulled downwards. The bellow (**6**) filled with concentrate is pressed together and delivers the concentrate onto the trough via the outlet valve (**8**). Directly after the pulse the bellow returns to its original shape and new concentrate flows into it via the now open inlet valve (**5**). (Fig. 2)

Cafitesse 110 (coffee or tea delivery)

- When a delivery button has been actuated, the flexi-pack dosing system doses concentrate into the trough where hot water is added.

Cafitesse 120 espresso delivery

- When a delivery button has been actuated, the flexi-pack dosing system doses concentrate into the mixing funnel where hot water is added. Afterwards the mixture of concentrate and water passes through a mixing unit.

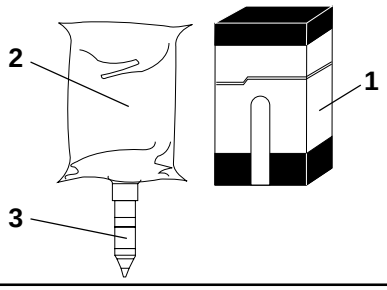
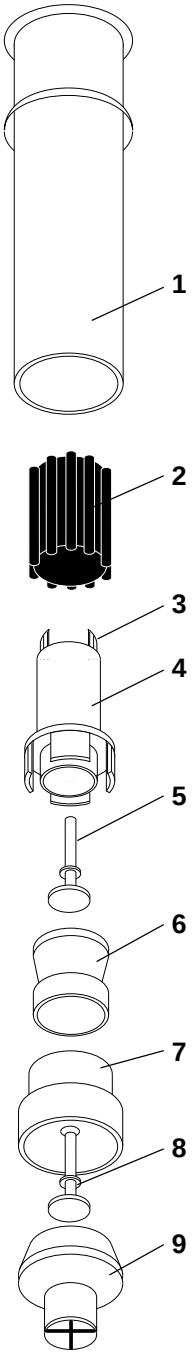


Fig. 1



Legend for fig. 2:

1 dosing tube
2 black floater
3 ring carrier
4 tappet ring
5 inlet valve
6 bellows
7 outlet socket
8 outlet valve
9 outlet nozzle

Fig. 2

Steps during the dosing process

1. A delivery button is actuated.

2. The water outlet valve opens.

3. The circuit of the concentrate dosing coil is activated with a delay of approx. 0.3 sec. The number of pulses to the coil depends on the ratio (beverage strength) set on the control board and on the delivery volume.

   In order to guarantee a constant beverage strength, the pulses are emitted at regular intervals. The 0.3 sec. delay ensures that water and concentrate are delivered simultaneously from the trough.

4. The dosing process is completed approx. 0.3 sec. after the water outlet valve has been closed. Water in the valve outlet hose bridges the time delay by shortly flushing the outlet trough.

Ratio (beverage strength)

- The ratio depends on the number of pulses emitted by the concentrate dosing coil while the water outlet valve is opened.

- **Flow speed:**
  The dispenser is equipped with a nozzle in the outlet elbow which limits the flow to 4.5 l/min (75 cc/sec.).
  When it has been programmed with the Service Device, this value determines the time for which the valve will be open and the pulse frequency.

- **Number of pulses:**
  The concentrate : water ratio can be changed. (see chap. 4)
  The delivery volume per pulse is 0.105 cc.
  The breaks between the pulses depend on the flow speed and on the adjusted ratio.

- **Water volume:**
  The microprocessor calculates the volume of the delivered water:
  Water volume per delivery = volume of the beverage delivered - concentrate volume

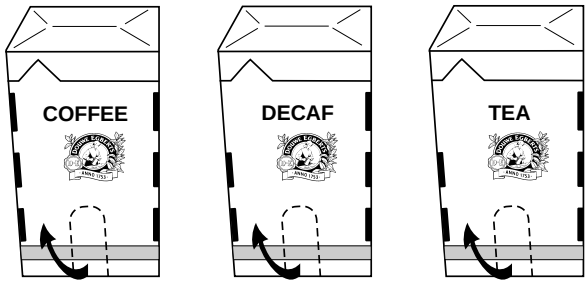
- **Empty indicator:**
  A photodiode and a photo transistor are attached to the concentrate coil. When there is concentrate in the dosing tube of the flexi-pack, the ray of light of the photodiode is interrupted and the empty indicator on the switch cover is off.
  When there is no concentrate in the dosing tube, the infrared light arrives at the photo transistor, the empty indication circuit is activated and the LED shines.
  The sensitivity of the empty indication circuit must be adjusted on the conrtol board for coffee or tea concentrate. (see adjustment)

C.3.2.1 Overview: Flexi-Packs for Cafitesse 110/120

CAUTION: The instructions for storage and handling indicated on the flexi-packs must always be observed!
The manufacturer cannot be held liable for malfunctions of the dispenser which result from incorrect handling of the flexi-packs.

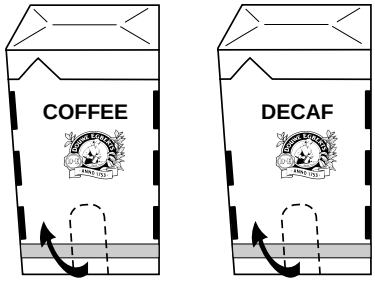
The following flexi-packs can be used with the dispensers:

Cafitesse 110



Coffee or tea delivery (the delivery of cold beverages, e.g. café cool, is possible when the dispenser has been retrofitted)

Cafitesse 120



Coffee or espresso delivery

C.3.3 Function: Mixer

- Cafitesse 120 dispensers are equipped with a mixer unit for the delivery of espresso.
- When a button for the delivery of espresso is actuated, hot water and concentrate are dosed and are put into the mixing container (**2**) via the mixing funnel (**1**). (Fig. 1)
- When the dosing process has been started, the mixer unit starts to operate with a set delay time. Then the water/concentrate mixture is in the mixing container (**2**). (Fig. 1)
- The water/concentrate mixture is mixed in the mixing container by the impeller (**3**) and delivered via the sieve housing (**4**) to produce foam. (Fig. 1)
- With portion sizes > 80cc mixing is done in several steps to prevent overflowing of the mixing container.
- During the mixing process the cooling is switched off.

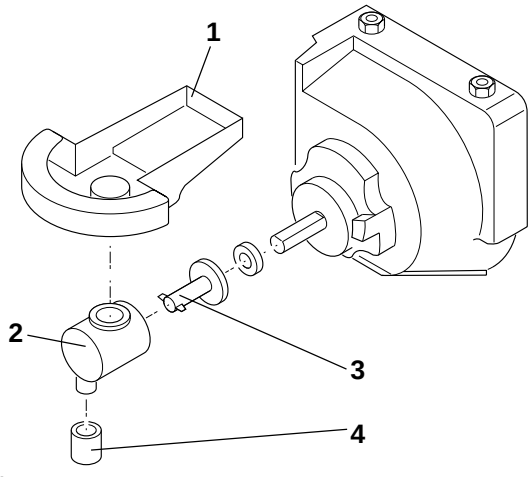


Fig. 1

C.4 Electrical Diagrams

C.4.1 Circuit of the concentrate coil

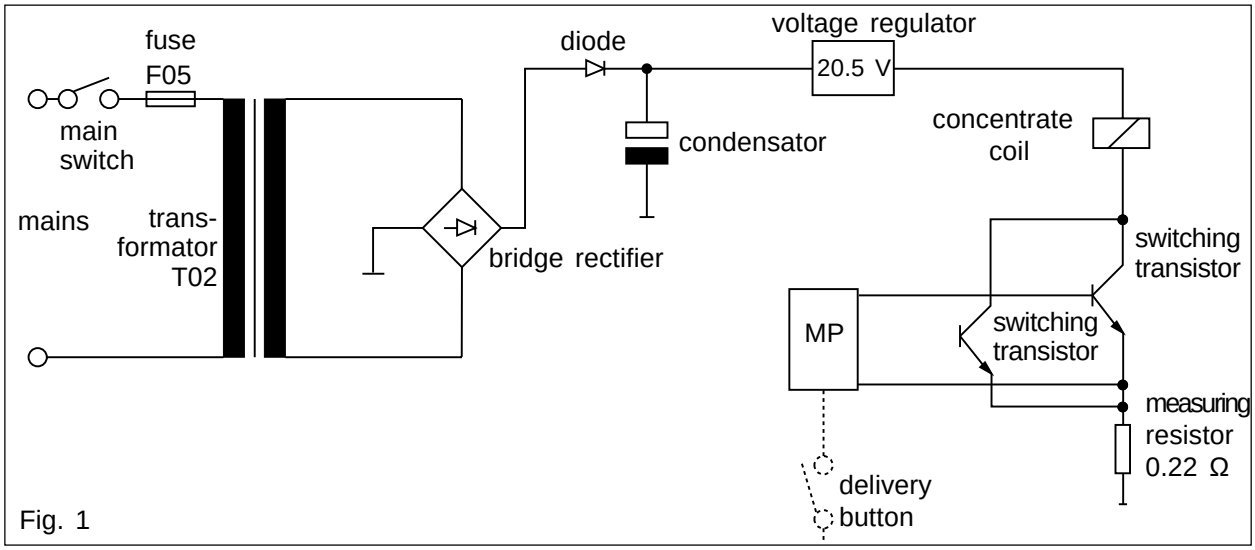


Fig. 1

- The secondary voltage of a 25 V transformator is rectified by a bridge rectifier and smoothened by a diode and a condensator. The smoothened voltage is stabilised at 20.5 V by a voltage regulator. (Fig. 1)
- The green LED on the pc board indicates that the 20.5 V supply is applied.
- Pulses are transmitted to the coil when the delivery button has been actuated. Each pulse enables the delivery of 0.105 cc.
- The microprocessor controls the pulse duration and the intervals.

a) Pulse current and pulse duration:

- Pulses are generated when the concentrate coil is triggered by the microprocessor via two transistors and is switched off again at a coil current of 5.2 A. The current is measured by measuring the voltage at a measuring resistor.

$$\frac{U}{R} = 5.2\ A$$

- In normal operation the pulse duration is 6.7 msec. When the pulse duration is not between 6.5 msec. and 10 msec., the error message 'Error last dosing' is indicated. This can only be read out by means of the Service Device.

The microprocessor switches the transistors off after a maximum pulse duration of 10 msec., even when the peak current value has not been reached. Dosing is still posible when the circuit is not interrupted, but it is not exact.

Special equipment and indicator circuit

- The indicator and special equipment are supplied by the concentrate coil circuit. The stabilised 20.5 V supply is regulated at 5 V by means of a resistor and a voltage regulator to supply future special equipment. The microprocessor transfers the counter data to the indicator.

C.5 Technical Specifications

WHAT:	HOW:
B2 coil	Voltage: 20.5 V DC
Motor support	Material: polystyrene, black*
Mixing funnel	Material: polypropylene, natural *
Mixing funnel cover	Material: polypropylene, natural *
Mixing container	Material: polypropylene, natural *
Flange	Material: polypropylene, natural *
Adjusting nut	Material: polypropylene, natural *
Impeller	Material: polypropylene, natural *
Adapter	Material: polyoxymethylene, natural *

* These parts must not be cleaned in a dishwasher

C.6 Options

WHAT:	FOR:	REQUIRED FOR:
Frappé	Delivery of coffee concentrate without hot water.	Kit 'Frappé'

C.6.1 Frappé

- The installation of the kit "Frappé" into a dispenser type Cafitesse 110 enables the delivery of coffee concentrate without hot water.
- The delivery of the coffee concentrate without hot water is performed by means of the central delivery button.
- The delivery of coffee concentrate without hot water cannot be performed on dispensers which are equipped for the delivery of espresso (Cafitesse 120) or cafe cool.
- The delivery of coffee concentrate without hot water requires the software version V2.7 or higher. (see chap. 4)

Installation of the kit 'Frappé'

- Switch off the dispenser by means of the main switch, disconnect the power supply plug, and close the water cock.

CAUTION: In order to prevent damage to the PC boards and their components due to electrostatic charge, first touch a metal table or a metal cupboard before touching the PC boards.

- Disassemble the dispenser's control (see chap. 5K.2).
- Remove the EPROM (**1**) from the control using the pulling-off device and insert the new EPROM containing the software version 2.7, included in the kit "Frappé". (Fig. 1)
- Make sure that one of the two jumpers (**3**) on the I^2C bus board (**2**) included in kit "Frappé" is closed and the other one is opened. (Fig.1)

It is of no regard to the function which one of the jumpers is opened and which one is closed.

- Mount the I^2C board to the control as shown in fig. 1.
- Plug the cable harness I^2C bus (**4**), included in the kit "Frappé", onto ST10 (**5**) of the control and onto ST01 (**6**) of the I^2C bus board. (Fig. 1)
- Connect the 4-polar connecting plug (**7**) of the cable harness operting panel to ST03 (**8**) of the I^2C bus board. (Fig. 1)
- Assemble the entire dispenser.
- Insert button 'frappé', included in the kit "Frappé", for the central button.
  Insert button 'freddo', included in the kit "Frappé", for the lower button.

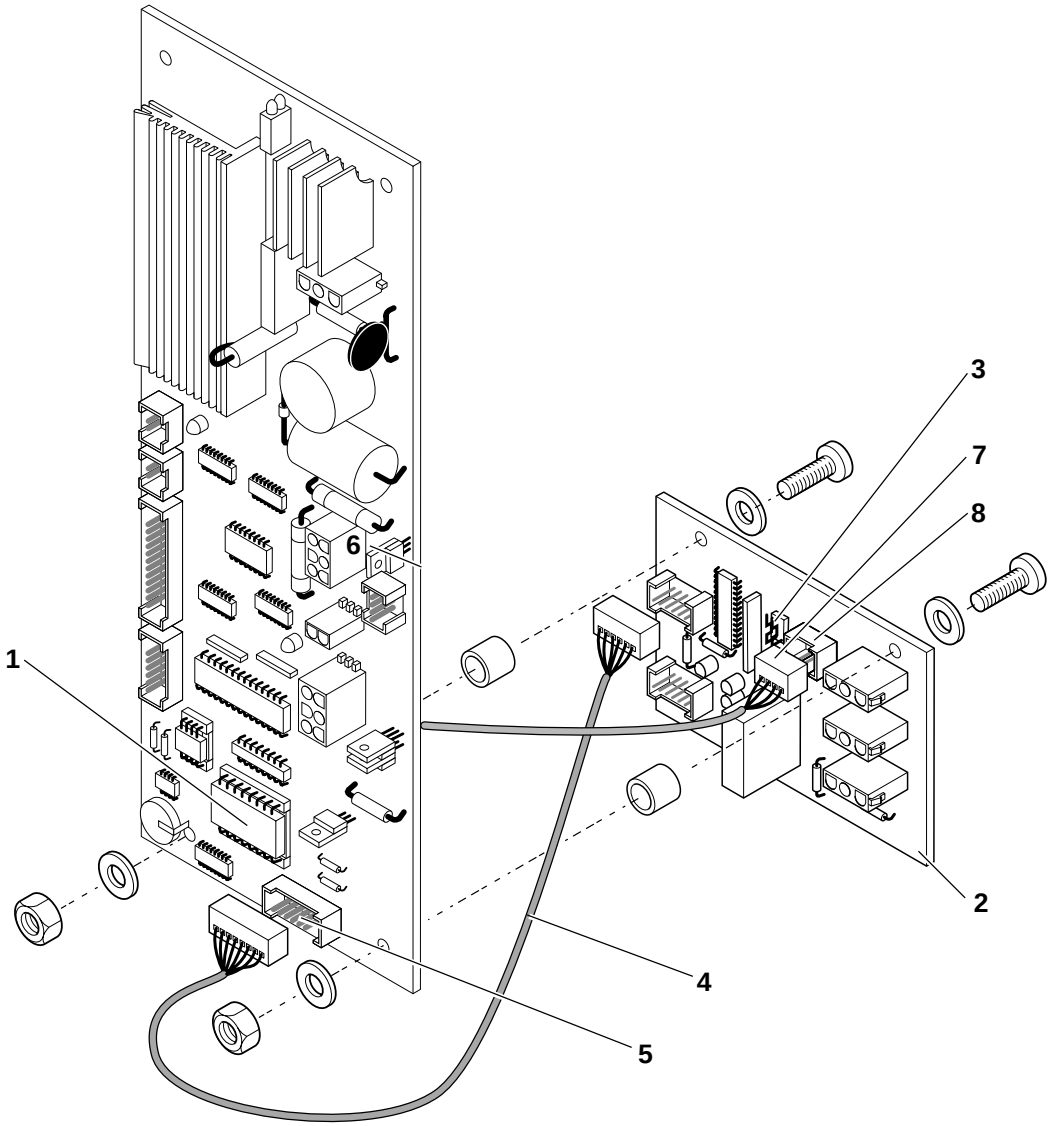


Fig. 1

- Open the water tap, connect the power supply plug and switch on the dispenser.
- Connect the service device and open the programming mode:
  The display of the service device indicates '**FRAPPE V2.7**'.
- Check all programming settings. This is required when changing over to software version 2.7.
- If required, adjust new programming settings for the delivery of beverage concentrate:

  Frappe vol=XXX.X
  Min: 1,0 Max: 50,0

Setting the concentrate volume:
Minimum: 1.0 cc, Maximum: 50.0 cc
in steps of 0.1 cc

Frappe dosing=XXX
1=cnt 2=rp 3=por

Setting the delivery mode for concentrate:
1=cnt: continuously
2=rp: constantly repeated
3=por: portioned

C.7 *Accessories*

Not available

D Product Delivery

D.1 Adjustments

WHAT	HOW
Cup/pot delivery	Programming via Service Device see chap. 4
Volumes	Programming via Service Device see chap. 4
Ratio	Programming via Service Device see chap. 4
Product	Cafitesse 110: coffee / tea Cafitesse 120: coffee
Delivery modes (portioned, continuous, repeated)	Programming via Service Device see chap. 4
Counter / counter values	Programming via Service Device see chap. 4
Buttons / button determination	Programming via Service Device see chap. 4
Cup carrier	Can be adjusted in height and can be inserted on the left and on the right

D.2 Disassemblies

D.2.1 Installation and Disassembly of the Buttons

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.

Installation:

- Install the button according to the customer's demand.

Remarks regarding the operating panel:

- With those push buttons that shall not actuate a delivery insert the dummy button.
  (Fig. 1)
- Programme the dispenser correspondingly.

Disassembly:

- Position the dismounting tool (**2**) for push buttons laterally behind the push button covers and remove the push button covers towards the front. (Fig. 2)

It is necessary to remove the push button covers for programming the dispenser as the connection for the Service Device (**3**) is situated behind the upper push button. (Fig. 3)

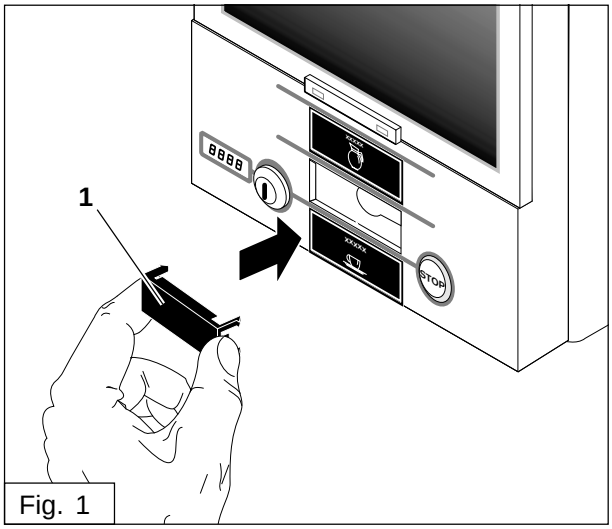


Fig. 1

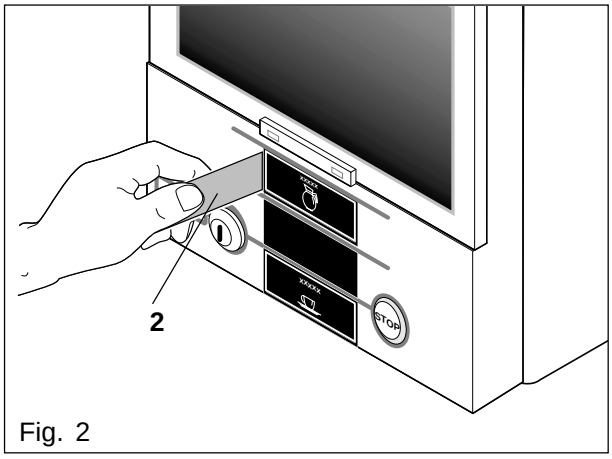


Fig. 2

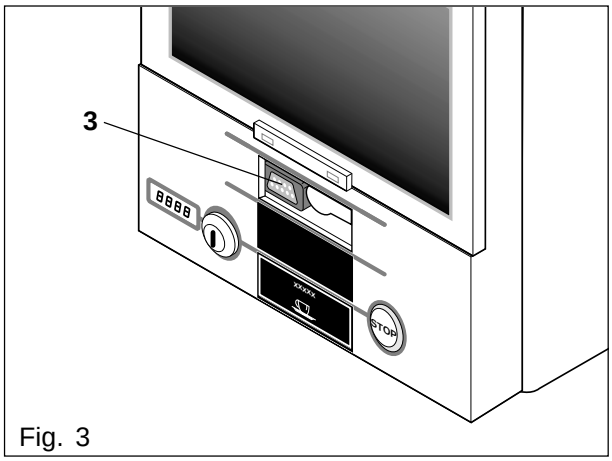


Fig. 3

D.2.2 Disassembly of the Pot Carrier and the Main Switch

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.

Diassembly:

- Remove the drip grid (**1**) and the drip tray (**2**). (Fig. 1, 2)
- Remove 2 screws (**3**) at the pot carrier (**4**). (Fig. 3)

When a drainage kit is applied, it must be removed.

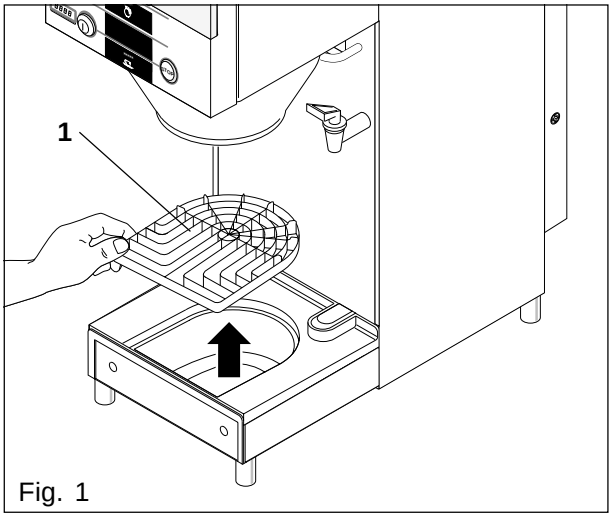


Fig. 1

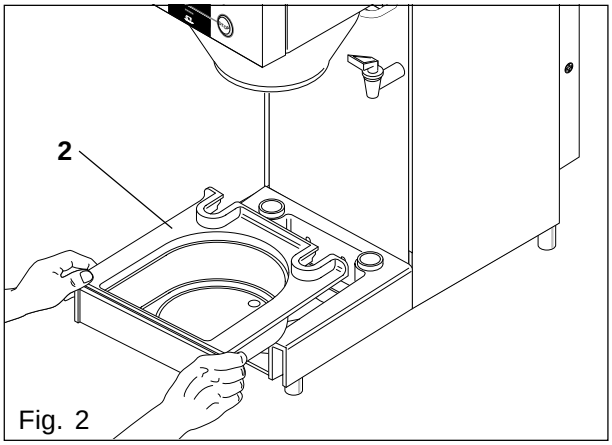


Fig. 2

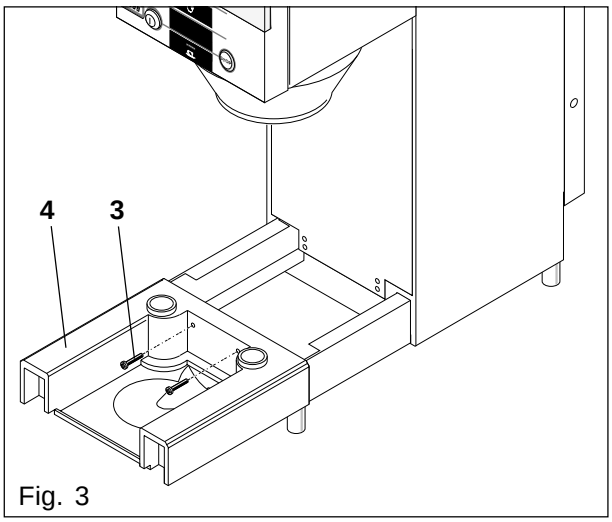


Fig. 3

- Pull the pot carrier (**4**) towards the front and turn it around. (Fig. 4)
- Press the locking mechanisms (**5**) of the main switch downwards by using a screwdriver. (Fig. 4)
- Press the switch towards the front out of the pot carrier housing. If required, carefully remove the main switch from the front.
- Disconnect the main switch (**6**) from the plug and replace the main switch if required. (Fig. 5)
- When remounting observe that
  - the main switch is mounted in correct position (ON/OFF). (Fig. 4),
  - the cables are not exchanged
    S02/1 at PIN 1
    S02/2 at PIN 2
    S02/3 at PIN 3
  - the cable harnesses are placed on the right and on the left side plates (**7**) of the housing and are not bent. (Fig. 4).
  - the pot carrier is inserted straightly and the screws are fastened tightly.

When the dispenser is equipped with a heating plate (option) or with a café cool kit, there will be a corresponding switch (**8**) on the right-hand side as well. These switches are dismounted in the same way as described above. (Fig. 5)

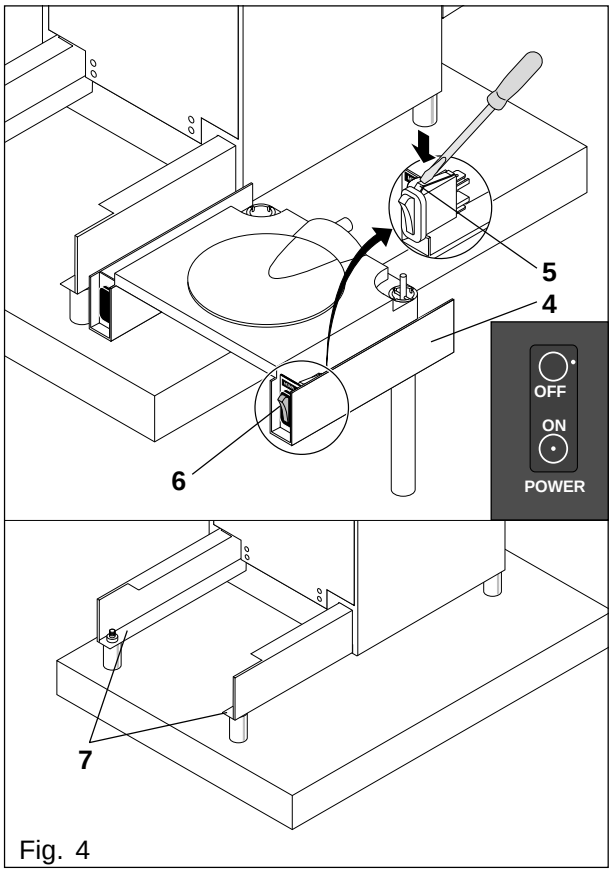


Fig. 4

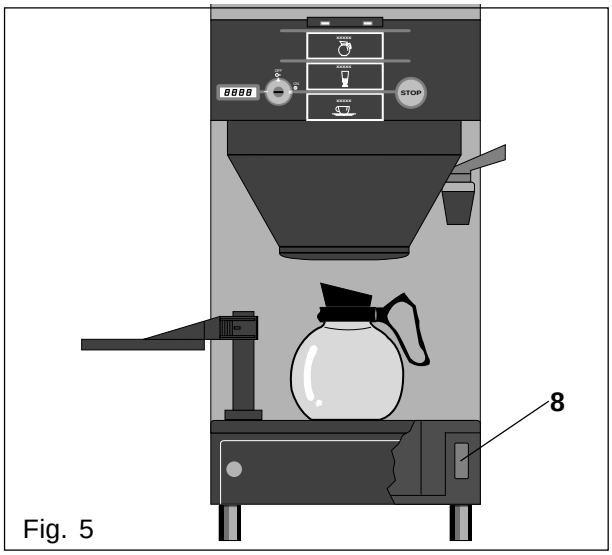


Fig. 5

D.3 Functional Descriptions

D.3.1 Total Overview - Product Delivery

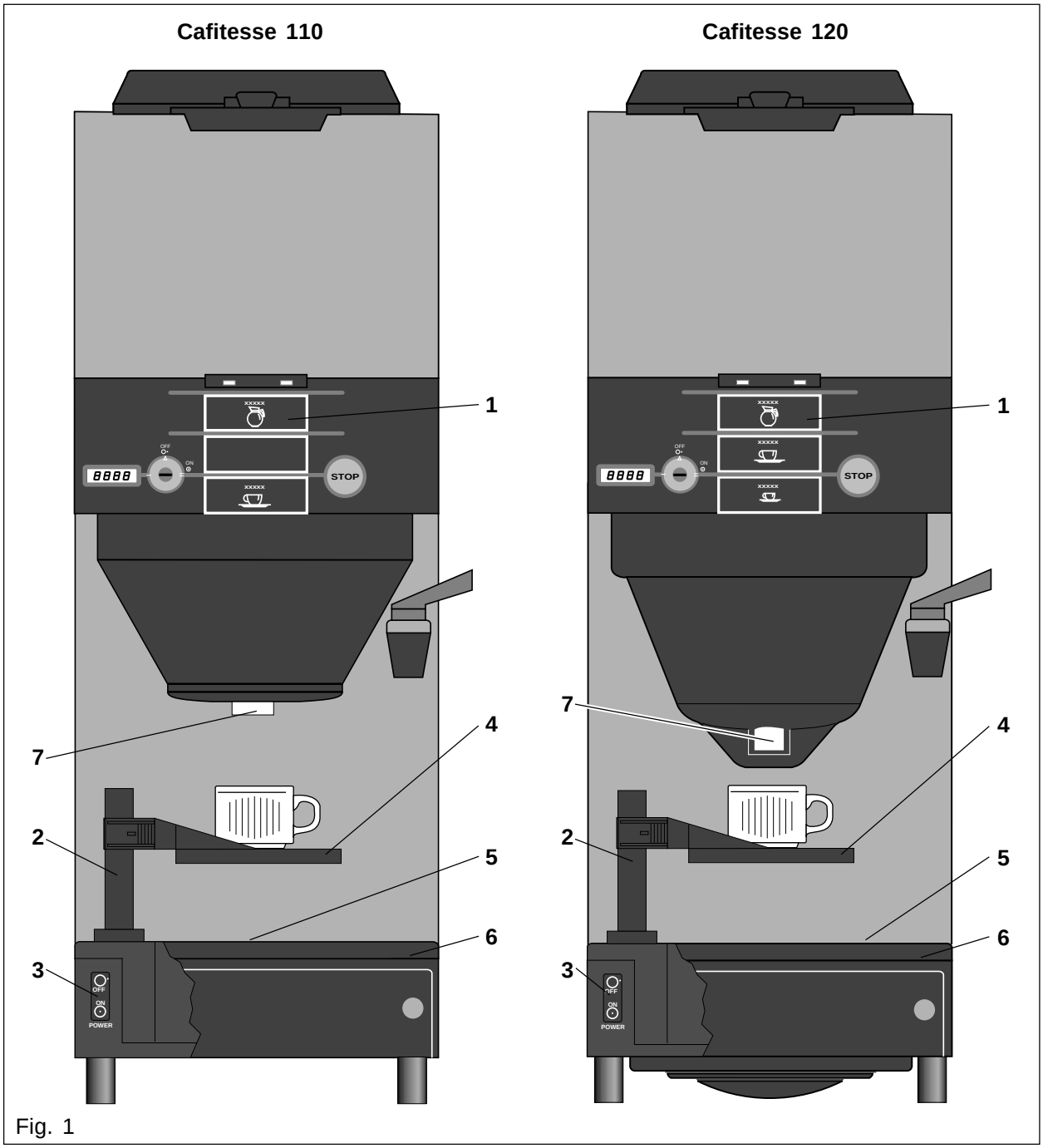


Fig. 1

- Legend for fig. 1:

  1 Push button
  2 Turn/lift support
  3 Main switch
  4 Cup carrier
  5 Drip grid
  6 Drip tray
  7 Outlet trough

D.3.2 Function: Push Buttons

- Depending on the dispenser adjustments made by the service technician during the installation, after actuating a push button, the beverages can be delivered as follows:

1) Portioned delivery (cup and pot):
The volume of a portion can be programmed by the service technician. A new beverage is only delivered when
- the last delivery process is finished and
- the push button is not pressed any longer for the previous beverage,
- the preprogrammed break is over and
- another push button is pressed for the delivery of a new beverage.

2) Continuous delivery (cup and pot):
The beverage is delivered as long as the corresponding push button is pressed.

3) Portioned, constantly repeated delivery (cup only):
A portioned beverage quantity is repeatedly delivered as long as the corresponding button is pressed.

- The beverage delivery buttons can be programmed by the service technician.

- When the stop button (**1**) has been actuated, the beverage delivery (except for the delivery of hot water) is interrupted directly. (Fig. 1)

ACHTUNG: Do not actuate the delivery buttons while the low temperature indicator of the boiler is shining. In this case the beverage temperature will be too low.

- A great variety of national push buttons with different portion sizes (pictographs) are available (see spare parts list).

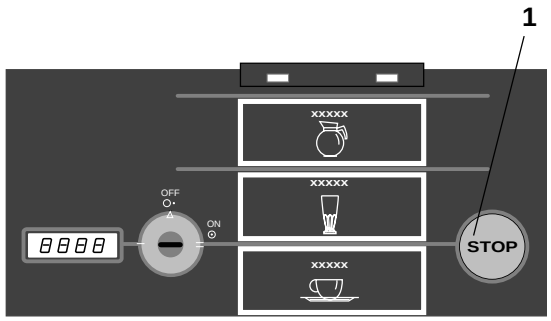


Fig. 1

D.3.3 Function: Cup Carrier, Drip Grid and Pot Carrier

- A glass, cup or mug for the beverage to be delivered will be positioned on the cup carrier.
- The height of the cup carrier (**1**) can be adjusted. (Fig. 1)
- When a larger container, e.g. a pot, is used, the cup carrier (**1**) can be turned aside. The drip grid and the drip tray can be removed. (Fig. 2)

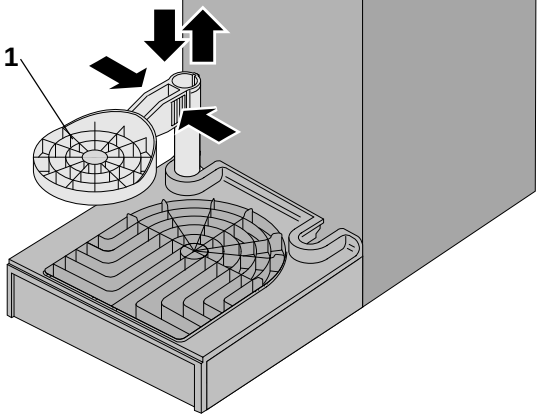


Fig. 1

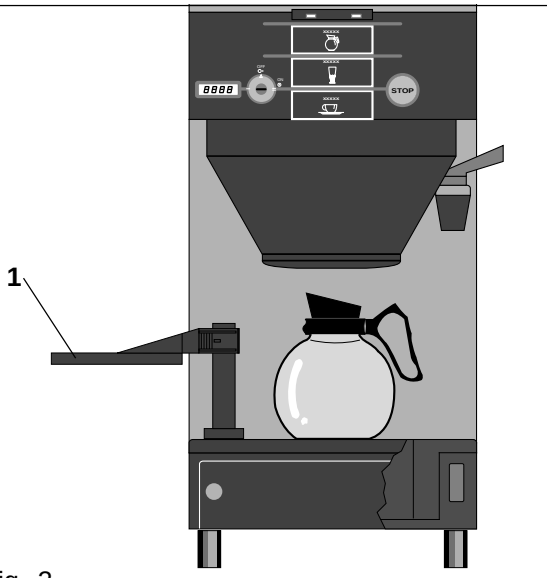


Fig. 2

D.4 Electrical Diagrams

Not required here

D.5 Technical Specifications

WHAT:	HOW:
Drip grid	Material: acrylonitrile-butadiene-styrene (-polymer) *
Pot carrier	Material: acrylonitrile-butadiene-styrene (-polymer) *
Drip tray	Material: acrylonitrile-butadiene-styrene (-polymer) *
Cup carrier	Material: acrylonitrile-butadiene-styrene (-polymer) *
Push buttons	Material: acrylonitrile-butadiene-styrene (-polymer) *
Main switch	specific for the different countries voltage: see dipenser types (mains voltage see chap. 2)

* These parts must not be cleaned in a dishwasher.

D.6 Options

Not available

D.7 Accessories

Overview accessories product delivery

WHAT:	FOR:	REQUIRED FOR:
Drainage kit	Drainage of the liquid / water from the drip tray	Kit 'drainage for the drip tray'

D.7.1 Drainage for the Drip Tray

Installation of the kit 'drainage for the drip tray':

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.

Installation:

- Insert the nozzle (**1**) into the hose (**2**) (252 mm) until the part with the greater diameter is completely enclosed.
  Insert the hose (**2**) with the nozzle (**1**) into the T-union (**3**). (Fig. 1)
- Connect the overflow elbow (**4**) on the rear of the dispenser. (Fig. 1)
- If necessary open the float cover on the pot carrier outlet (**9**). (Fig. 2)
- Position the hose (**2**) underneath the dispenser.
  Connect the hose to the pot carrier outlet and fasten it by means of cable binder (**5**). (Fig. 2)
- Move the coil spring (**6**) over the outlet hose (**7**). (Fig. 1)
- Connect the outlet hose (**7**) to the T-union (**3**). (Fig. 1)

CAUTION: **The coil spring (6) must be positioned in such a way that bending of the hose is prevented. (Fig. 1)**
The outlet hose must be placed on a lower level than the T-union and below the level of the outlet spout of the drip tray.

- Open the predetermined breaking point for the outlet (**8**) in the drip tray from the **bottom**. (Fig. 3)

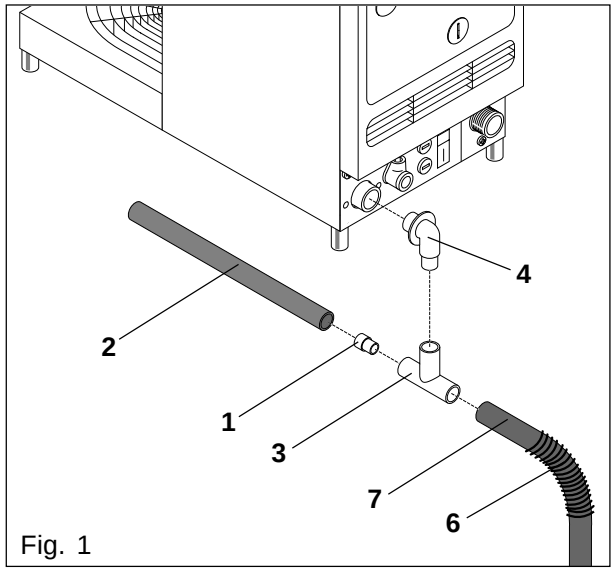


Fig. 1

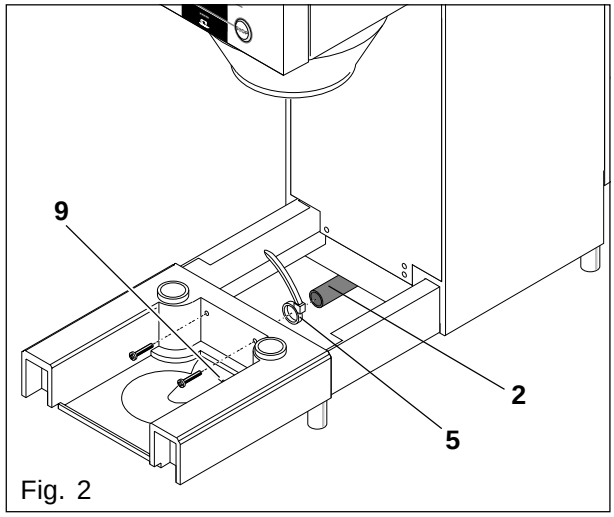


Fig. 2

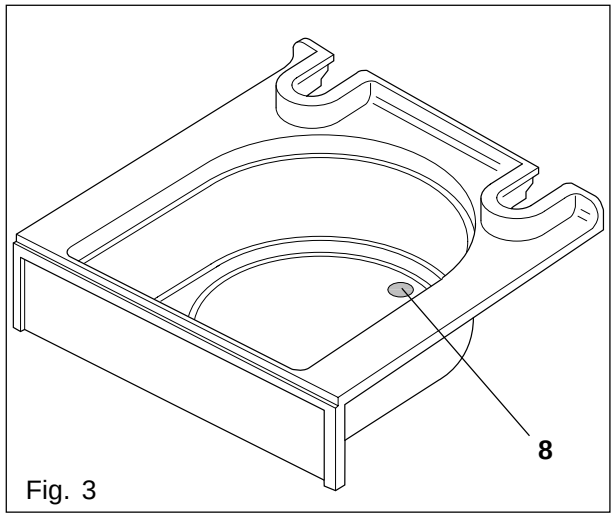


Fig. 3

F Cooling System

F.1 Adjustments

Not necessary here

F.2 Disassemblies

F.2.1 Disassembly of the fan

Preparation:

- Disconnect the dispenser from the mains supply and unplug the connection.
- Remove the operating panel cover (**1**) with screw (**2**). (Fig. 1)
- Withdraw the glass cover and the advertising plate laterally.

CAUTION: **When the front cover is made of glass, there is the danger of being injured due to unauthorized handling or breakage of the glass.**

- Remove the cooling compartment lid (**3**). (Fig. 1)
- Remove the housing cover (**4**). (Fig. 1)

Disassembly:

- Remove the fan (**5**). (Fig. 1)

Assembly:

- Assembly is done in reverse order.

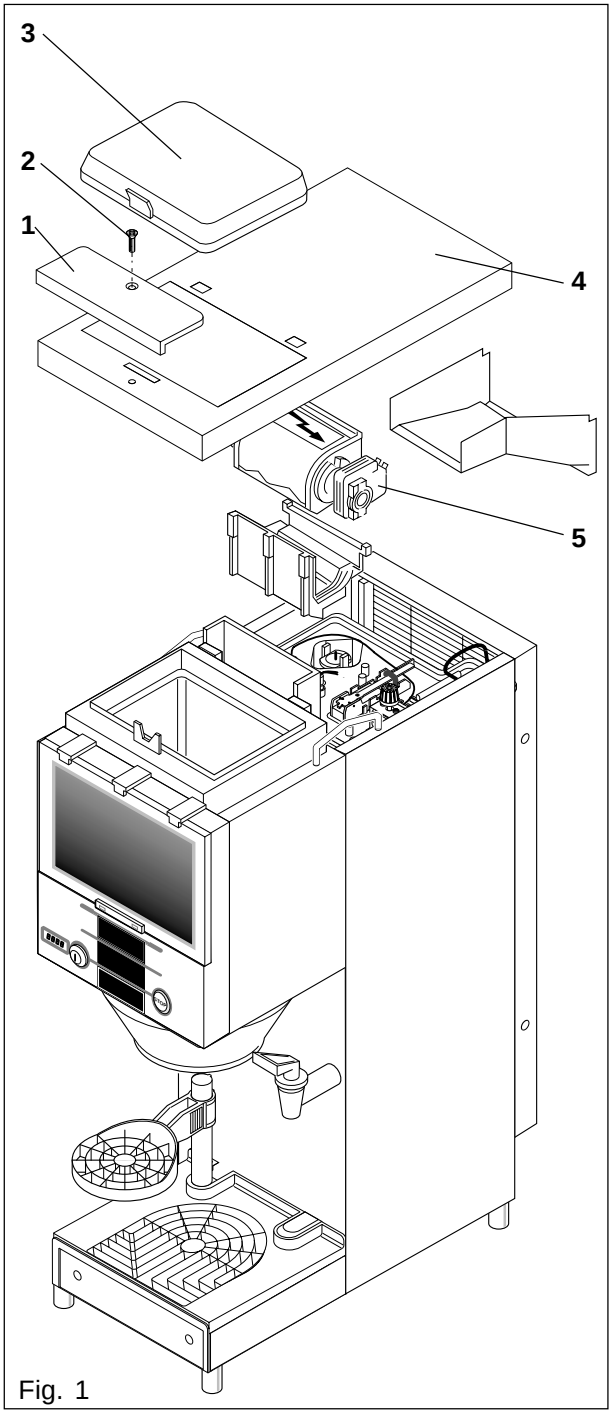


Fig. 1

F.2.2 Disassembly of the Cooling Compartment Insulation

Preparation:

- Disconnect the dispenser from the mains supply and close the water tap.
- Remove the front cover.

CAUTION: **When the front cover is made of glass, there is the danger of being injured if the glass cover breaks.**

- Completely remove the front part. (see chap. G.5)
- Withdraw the sheet covering (**1**) from the cooling compartment insulation and unplug the cable harness (**2**) from the pc board. (Fig. 1)

Disassembly:

- Remove the cooling compartment top (**3**). (Fig. 1)
- Remove the B2 coil:
  - remove the cellular sealing (**4**). (Fig. 1)
  - loosen the screws (**5**) and withdraw the B2 coil. (Fig. 1)
- Remove the bottom part (**6**) and the upper part (**7**) of the cooling compartment insulation and cut it up if required. (Fig. 1)

CAUTION: **<u>The Peltier element must not be damaged.</u>**
Observe that the cooling compartment is not placed on top of the Peltier element.
Do not dismount the Peltier element.

- Insert the new cooling compartment insulation (**8**) in the following order. (Fig. 2)
- Place the cable (**9**) in the recess of the upper cooling compartment insulation part. (Fig. 2)

CAUTION: **Observe that the Peltier element cables are placed correctly.**

- First, insert the upper part (**10**) of the new insulation and then the bottom part (**11**). (Fig. 2)

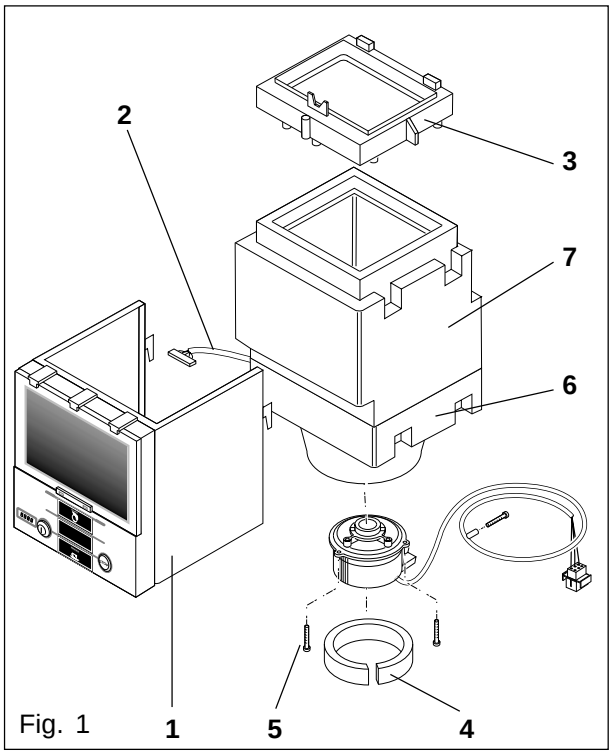


Fig. 1

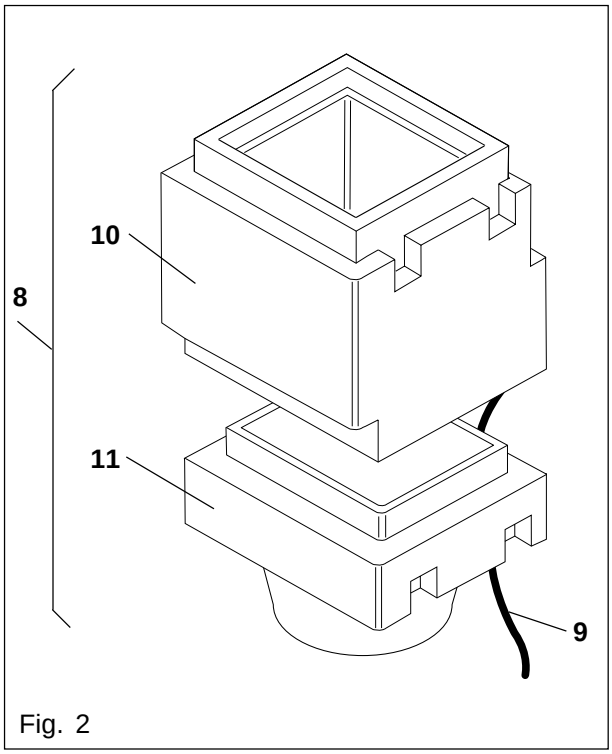


Fig. 2

F.2.3 Disassembly of the Peltier Element

- Disconnect the dispenser from the mains supply and close the water tap.
- Remove the front cover.

CAUTION: When the front cover is made of glass, there is the danger of being injured if the glass breaks.

- Remove the front part. (see chap. G.5)

CAUTION: Observe that the cooling compartment is not placed on top of the Peltier element.

Disassembly:

- Remove two screws (**1**). Remove the insulating bush (**2**), the pressure plate (**3**), the heat sink (**4**) and the Peltier element (**5**). (Fig. 1)
- Ensure that the ground lug (**6**) and the lock washer (**7**) of the upper screw (**1**) do not get lost. (Fig. 2)
- Clean the Peltier element support at the cooling compartment and the support at the heat sink by means of pure benzine.
- The surface must not be scratched or damaged. If the surface, however, has been damaged, polish it slightly.
- Clean the Peltier element surface by means of pure benzine and dry it.

Only use silicone grease (part no. K-0085) for the following step.

- Uniformly apply a thin film of the silicone grease.

CAUTION: The Peltier element is very sensitive with respect to ruptures (thin ceramic plates, wire connections).

- Position the Peltier element (**5**) centrally on the cooling compartment support. (Fig. 3)
- Ensure that the red and black connecting wires for the Peltier element are positioned correctly. (Fig. 3)

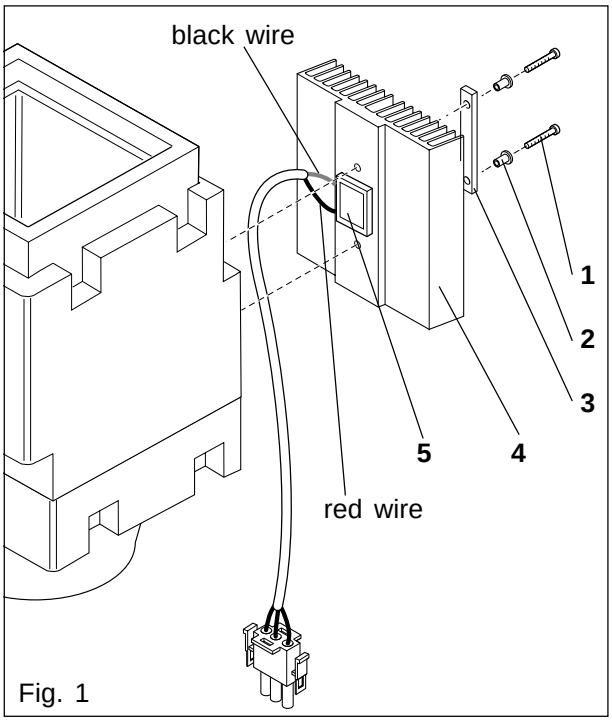


Fig. 1

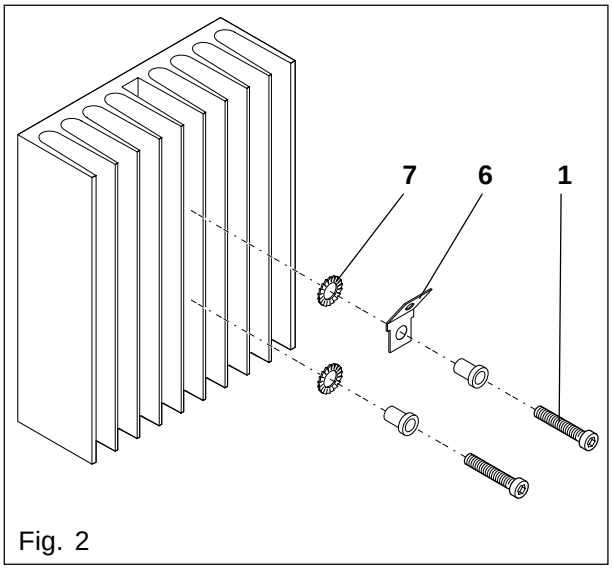


Fig. 2

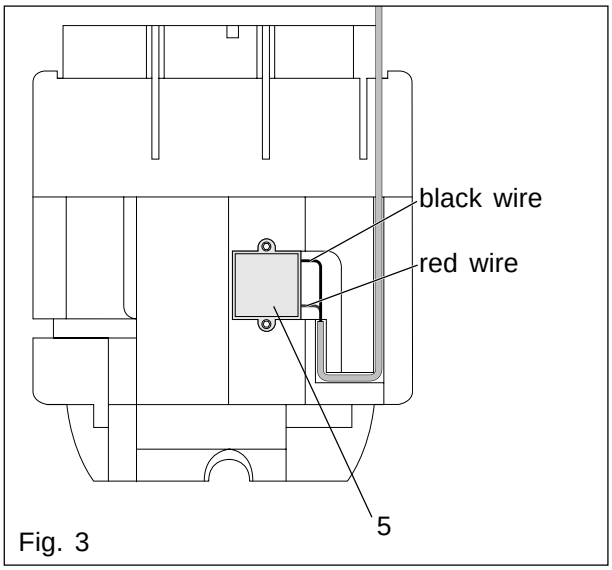


Fig. 3

- Place the cable harness (**1**) of the Peltier element in the recess of the insulation (**2**). Position the cooling compartment in such a way that the holes for the screws are placed exactly opposite the holes of the cooling compartment. (Fig. 4)

CAUTION: **Ensure that the Peltier element is not moved.**

- Check whether the plastic insulating bushes (**3**) are damaged and replace them if required. (Fig. 5)

- Insert the screws, the insulating bushes abd the pressure plate in the heat sink.
  Mount the parts onto the **upper** fastening screw (**4**) in the following order: (Fig. 5)
  1. Lock washer 4.3 mm (**5**)
  2. Ground lug (with the lug towards the top) (**6**)
  3. Insulating bush (**3**)

- Place a suitable 1 mm gauge underneath one end (**7**) of the pressure plate. (Fig. 4)
  Fasten the screw at **this end** (**7**) of the pressure plate just until the gauge is still held.
  Fasten the screw at the **other end** of the pressure plate (100 Ncm) by using a torque wrench (part no. B-0399) and the hexagonal insert 3 mm (part no. B-0398). (Fig. 6)

CAUTION: **Fasten the screw respectively by 1/4 of a turn until the torque wrench reacts at 100 Ncm.**

- Remove the gauge.

CAUTION: **Observe that the pressure plate is only supported centrally by the heat sink, but not at the ends. (Fig. 6)**

- Plug the ground connection.

- Remount the dispenser.

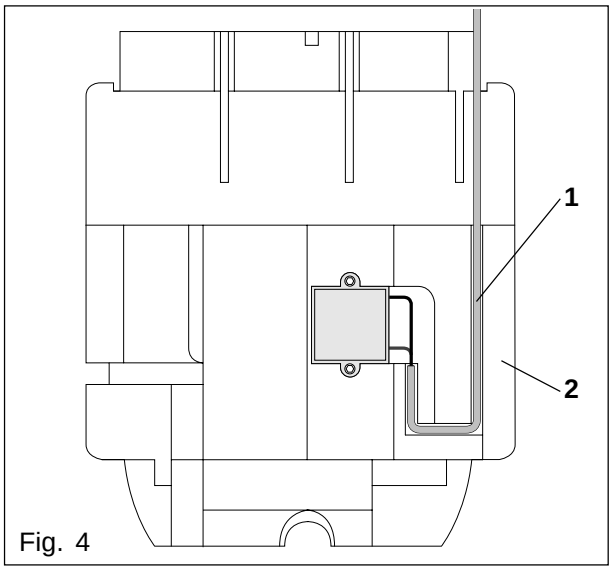


Fig. 4

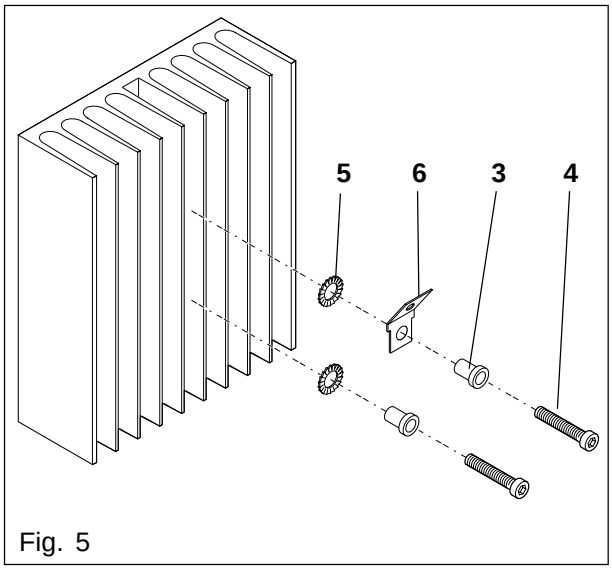


Fig. 5

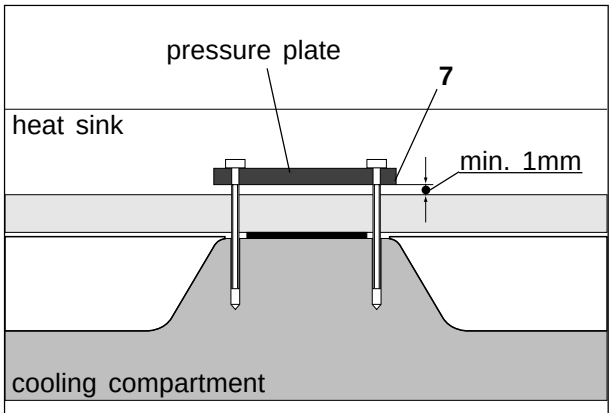


Fig. 6

F.3 Functional Descriptions

F.3.1 Total Overview Cooling System

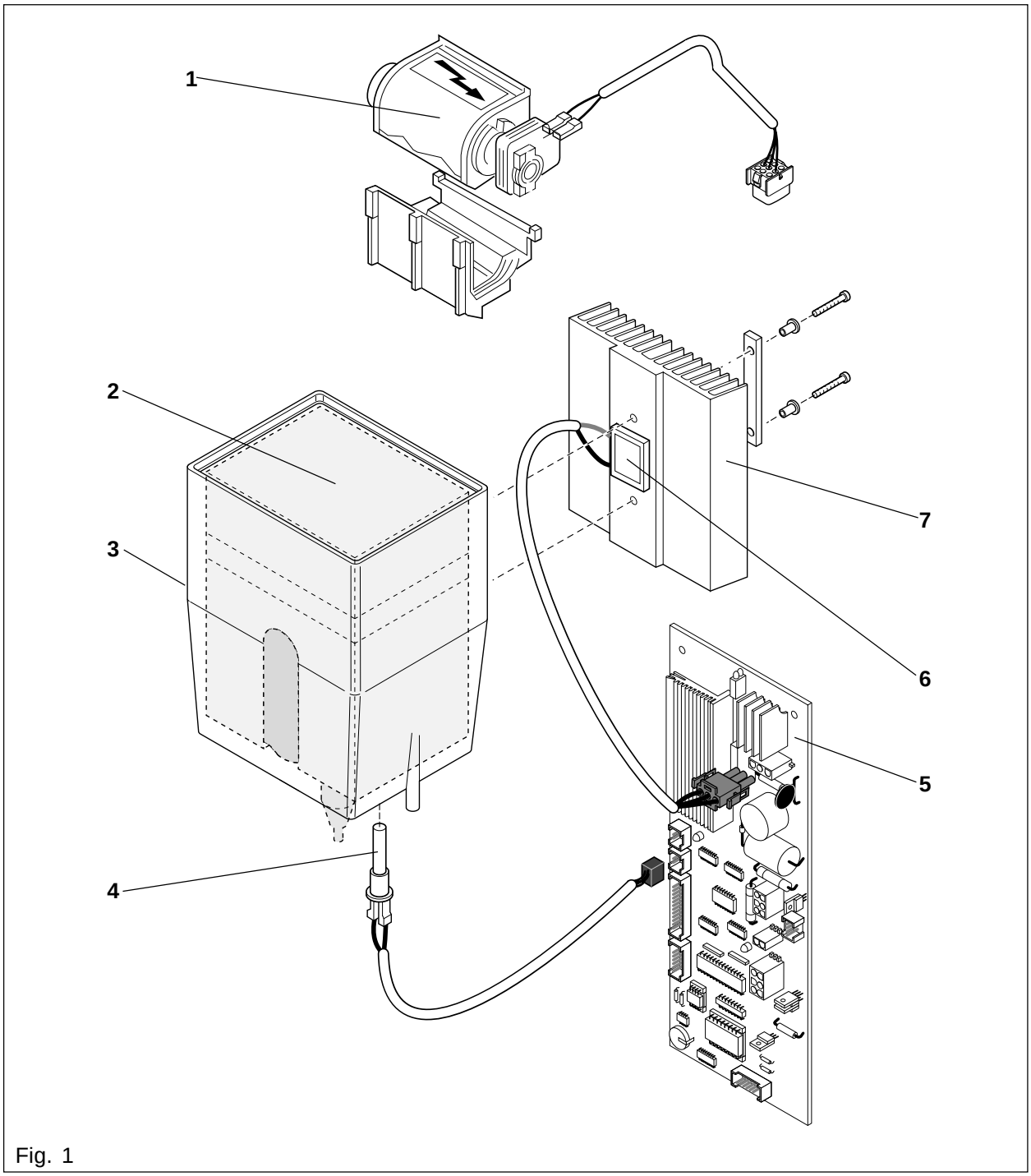


Fig. 1

- Legend for fig. 1

  1 Fan
  2 Flexi-pack
  3 Cooling compartment
  4 Temperature sensor
  5 Control
  6 Peltier element
  7 Heat sink

F.3.2 Function: Cooling System

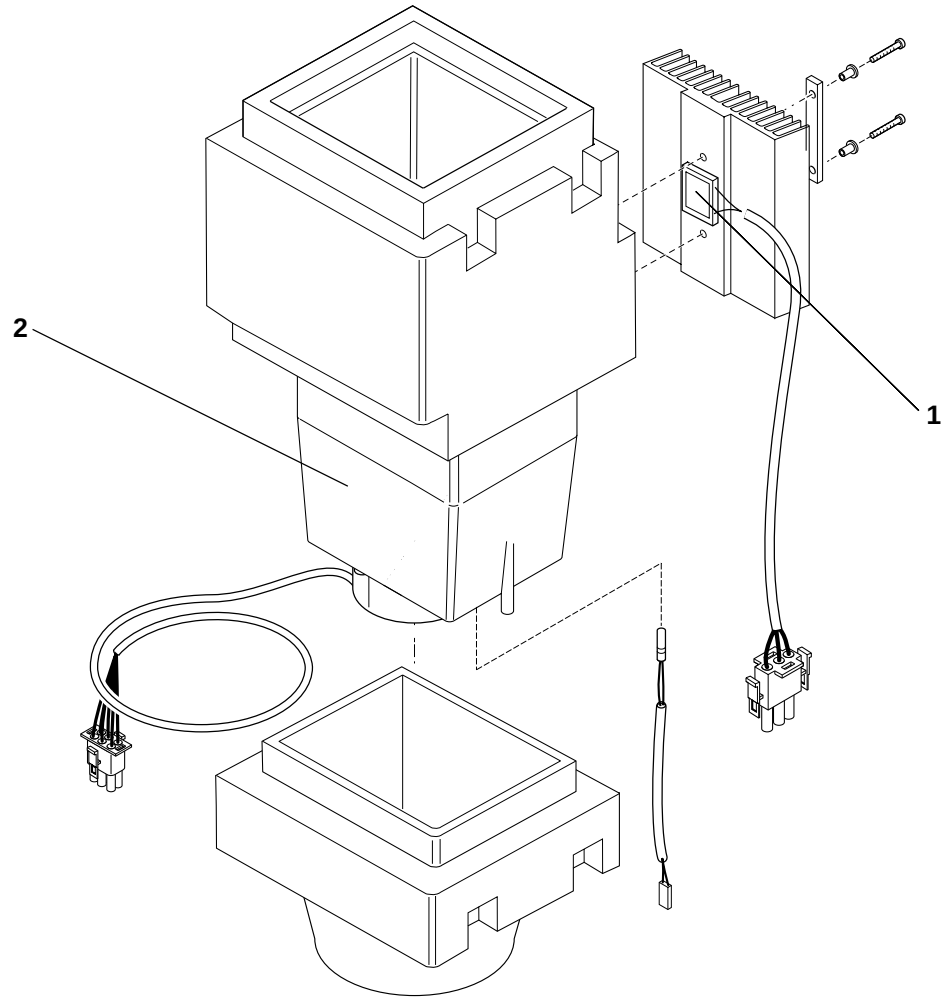


Fig. 1

The principle of thermoelectric cooling

- For cooling the flexi-packs, the dispenser is equipped with a thermoelectric cooling system. The element in such a system is called Peltier element (**1**). (Fig. 1)
- The Peltier element (**1**) consists of a series of thermoelectric cooling cells. The elements of the cooling cells consist of 2 bismuth semiconductor bridges made from tellurium with different doping. (Fig. 1)
- The amount of heat that is transferred is proportional to the electric current and to the amount of cooling cells contained in the Peltier element.
- Cells are electrically connected in series in the Peltier element.
  Viewed thermally, these cells are connected in parallel.
  The typical electric current (in a stable, cooled state of the system) is approx. 3.5 A.
- The Peltier element (**1**) acts as a heat pump and transfers the heat energy from the cold cooling compartment side to the warm heat sink side. In addition to the cooling power (typically 10 W) from the cooling compartment, the electric loss of the element (typically 35 W) is also transferred to the warm side. (Fig. 1)

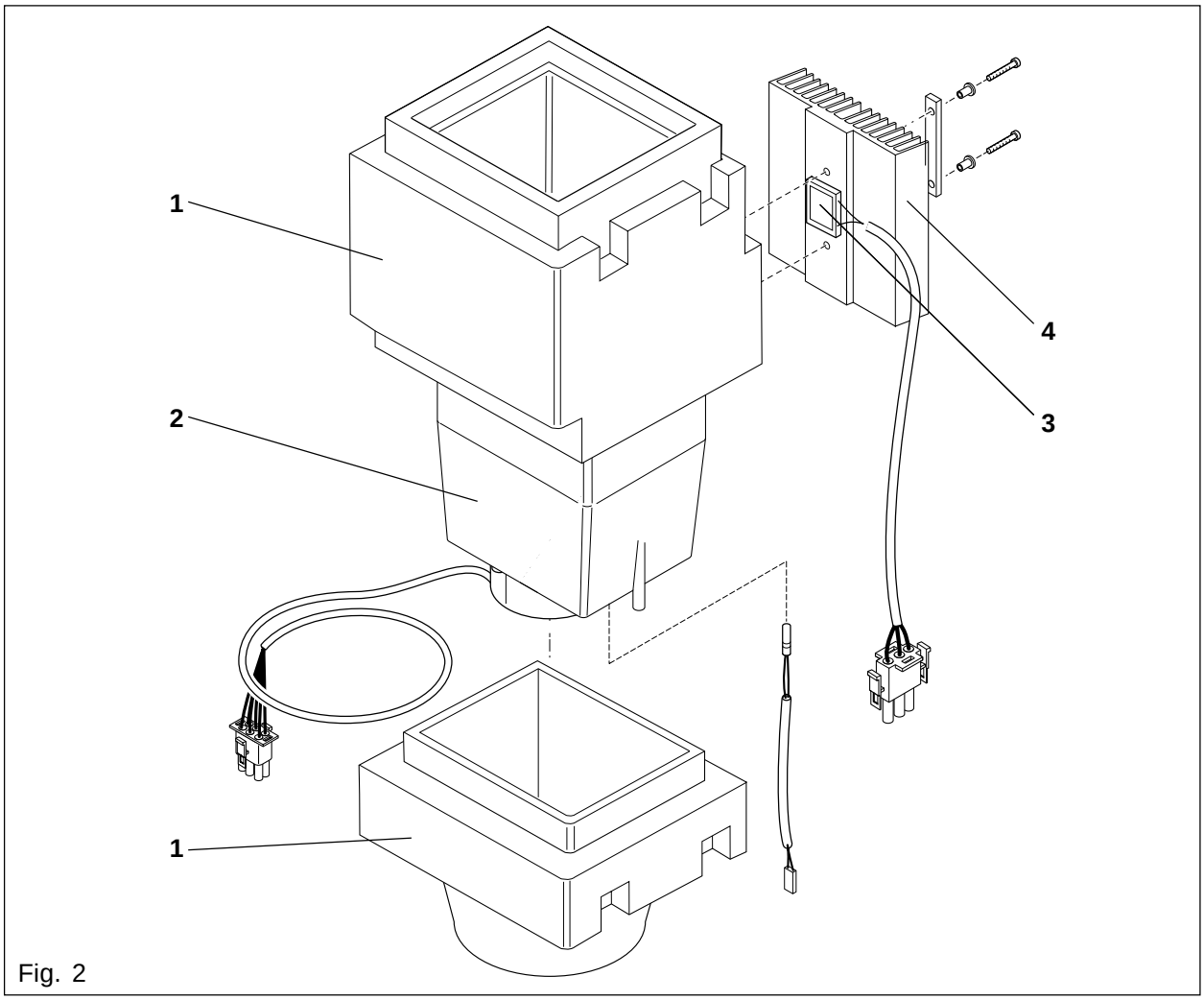


Fig. 2

Design of the cooling system

- The design of the system is shown in fig. 1:

Insulation (1)

- The two-part styrofoam insulation (**1**) serves to reduce the heating effect of the surrounding area. (Fig. 2)

- Due to the relatively low refrigerating capacity of the Peltier cooling a thick insulation is necessary which helps to keep the energy consumption of the system low.

Cooling compartment(2)

- The cooling compartment (**2**) consists of a diecast aluminium container with an additional surface to fasten the Peltier element (**3**). The incoming heat is taken up by the container wall and led to the Peltier element. (Fig. 2)

Peltier element (3)

- The Peltier element is made from ceramic plates. The cooling elements are situated between these plates.

- Very important for a proper functioning of the system is a very good heat conduction from the Peltier element (**3**) to both sides. This is effected by plane contact surfaces on the cooling compartment (**2**) and the heat sink (**4**) and by a heat conducting material which is used as contact material (e.g. silicone lubricant). It is very important to use only a small amount of the heat conducting material and to spread it very evenly. (Fig. 2)

DANGER: **When mounting, ensure that no dust particles gather between these two planes.**

Peltier element

- The development of condensation water on the cold side in the Peltier element could lead to corrosion which could drastically reduce the durability of the element.
  As a protection, the inner parts of the element are coated with a thin layer of epoxy resin. On the outside the Peltier element is protected against humidity by means of silicone.

Heat sink (4) (Fig. 3)

- The heat sink (**4**) is a ribbed aluminium body which distributes the heat over an area big enough to transfer it to the surrounding air when the fan is running without causing an accumulation of heat. (Fig. 1)
  The typical temperature of the heat sink is approx. 10 °C above the ambient temperature.

- Contamination by dust and grease (e.g. especially in kitchens) can reduce the heat transferring properties which in turn reduces the effectivity of the cooling system. In an extreme case the temperature of the heat sink and thus the temperature of the warm Peltier element side could rise to a point at which the Peltier element would be destroyed.

Fan (5)

- The heat sink is cooled by the air stream generated by the fan (**5**).
  For effective cooling it is indispensable that the fan functions correctly. (Fig. 4)

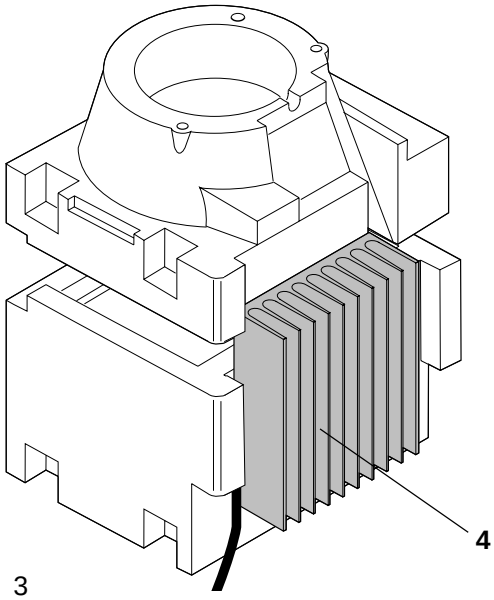


Fig. 3

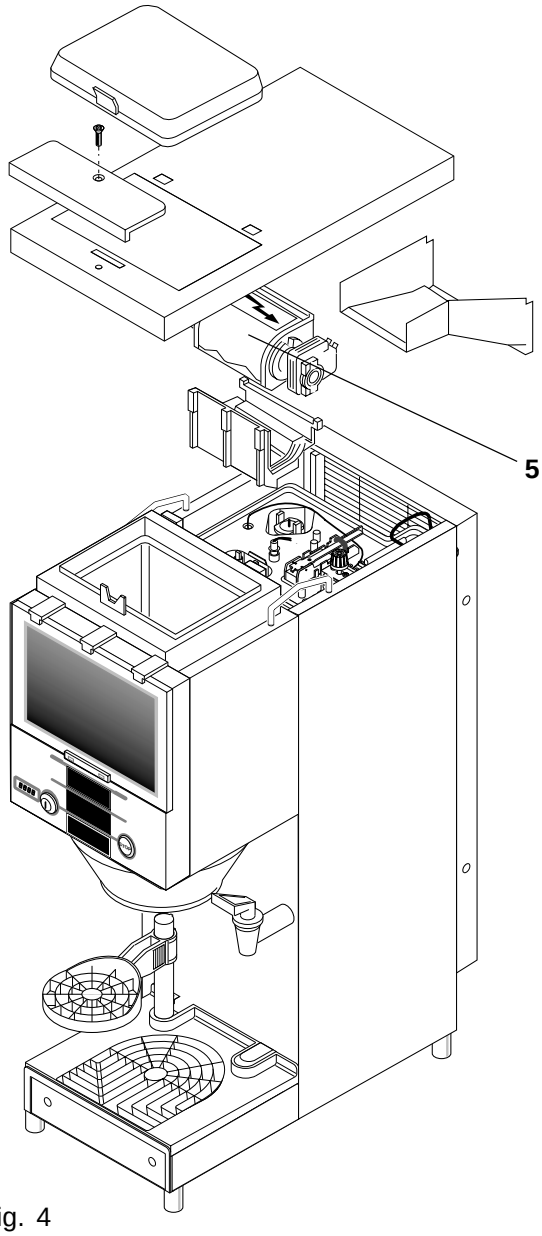


Fig. 4

Temperature regulation

- The electronic temperature sensor is attached on the outside to the cooling compartment base.
- The cooling system is supplied by the transformator T01. The secondary voltage is rectified on the control board.
- The sensor connects the cooling circuit when the cooling compartment temperature rises to approx. 2.8 °C and switches direct current of 11–13 V (depending on the mains supply voltage) to the Peltier element.
- Heat is conducted from the cooling compartment through the heat sink and the fan to the surrounding air. The fan is connected to the mains supply and operates permanently.
- The sensor disconnects the cooling circuit when the temperature decreases to approx. 1.7 °C. The temperature regulation ensures that the concentrate is kept at a specific temperature of +2 °C to +6 °C.
- The cooling system can only be switched off by disconnecting the dispenser from the mains supply.

Ambient temperature

- When the ambient temperature exceeds 32 °C sufficient cooling cannot be guaranteed any more.

Error indications cooling compartment temperature

- see chapter Error Codes

Temperature sensor

- The function of the temperature sensor in combination with the microprocessor is similar to that of a thermostat.
- Temperature deviations at the cooling compartment wall are transferred to the sensor by means of thermal conduction. Increasing or decreasing temperatures result in a corresponding increase or decrease of the sensor resistance (PTC).
- This alteration results in a voltage change in the control circuit which will be registered by the microprocessor.
- The microprocessor compares the data to switch the cooling circuit on or off.
- The correct function of the PTC sensor is important for the correct function of the cooling system.
- In the case of improper cooling, the sensor must be checked.
- Alternatively, one of the following procedures can be applied:

  a) Comparative measurement old - new, at the same temperature

  b) Resistance measurement and comparison with the value from the diagram.
  Due to self-heating, the measuring current must not exceed 1 mA.

- **Formula for the resistance**

  R = 813 + (6.96xT) + (0.0208xTxT) Ohm

  T = temperature of the sensor in °C
  The formula is valid for -25 < T < 25 °C.

  Resistance/temperature table

Normal R (Ohm)	Normal T (°C)
652	-25.0
700	-17.1
750	-9.3
800	-1.9
813	0
850	5.2
900	12.1
950	18.6
1000	25.0
1050	31.2

- **Sensor tolerances**

at an indicated temperature : +/- 5 Ohm
at an indicated resistance : +/- 0.7 °C

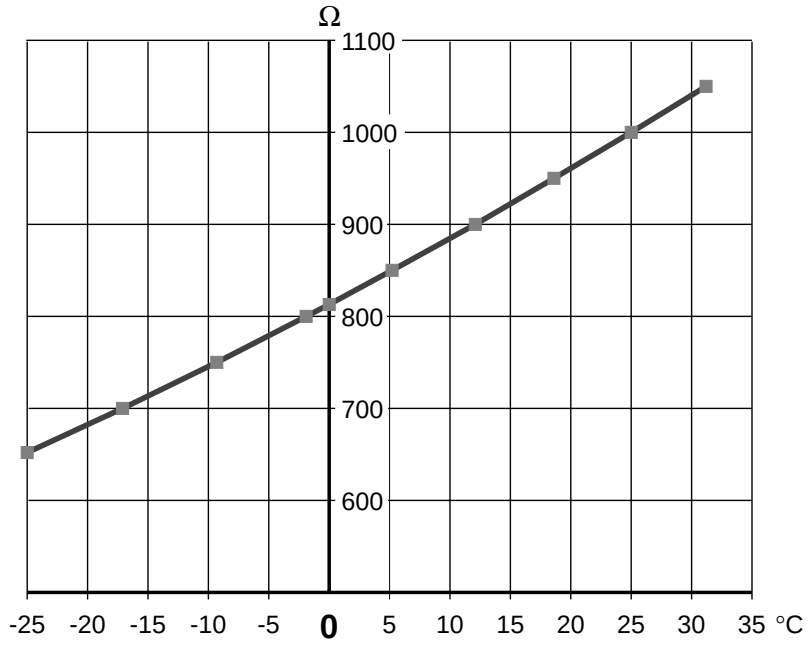


Fig. 1

Supervision Peltier current

- The value of the Peltier current is detected by the control due to a voltage drop. It can be measured by means of a measuring resistor (0.1 Ohm; on the control board).

- The cooling is switched off in order to protect the Peltier element from damage due to a short-circuit:
  - when I > 5 A.
    The microprocessor activates flashing of the empty indicator LED.
    or
  - **when**
    for more than 10 sec. I < 1 A or > 4 A.
    The microprocessor activates flashing of the empty indicator LED.
    This error can be caused by lacking heat conduction of the heat sink (it is either very dirty or the fan is not operating).
    When the heat sink temperature increases, the electric current through the Peltier element decreases.

- Normally, (i.e. in a stable, cooled condition) the Peltier current is in the range of 1 – 3.2 A.
  In the first minute after a current interruption it can, however, be up to 15 % higher.

F.4 Electrical Diagrams

F.4.1 Cooling Circuit

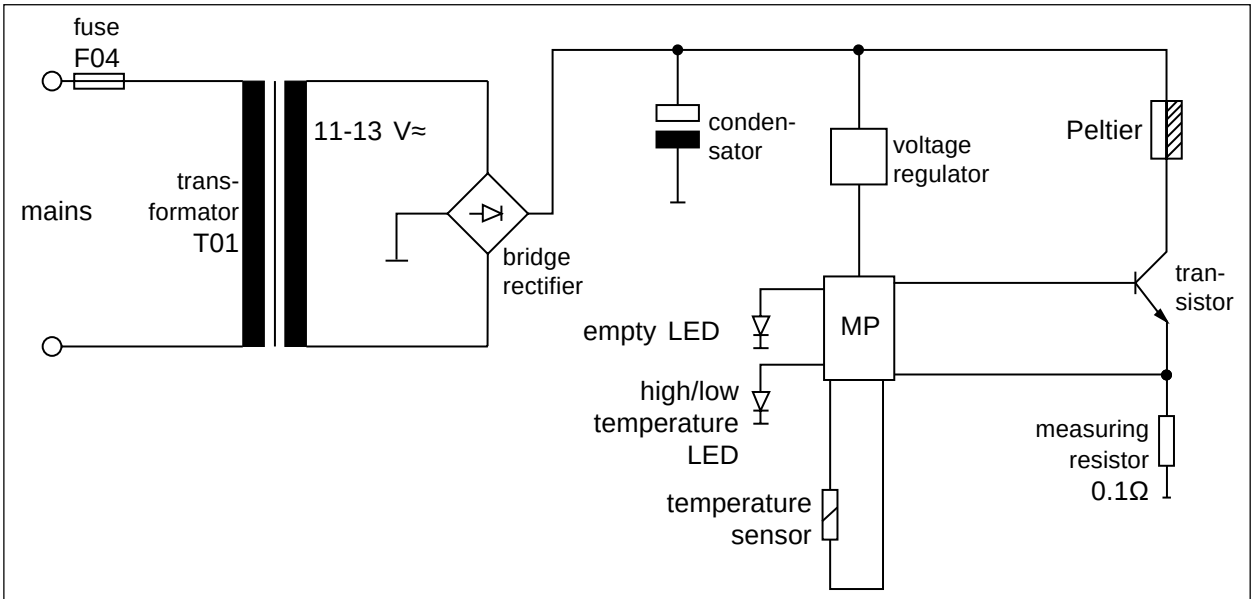


Fig. 1

- A transformator supplies the cooling circuit with 11–13 V AC (depending on the mains voltage).
  The Peltier element is supplied with dc current by a condensator and a bridge rectifier on the pc board.
  The microprocessor requires the data of the cooling compartment temperature and of the Peltier current in order to control the cooling and to check the circuit functions:

a) Measuring the cooling compartment temperarture:

   The sensor resistance increases when the temperature increases (PTC). The microprocessor switches the Peltier supply via a transistor as follows:

   ON when R > 853 Ohm
   (correspondingly T > 5.7 °C)
   OFF when R < 846 Ohm
   (correspondingly T < 4.7 °C)

- The microprocessor activates flashing of the temperature indicator LED when:
  temperature high R > 905 Ohm
  (correspondingly 12.7 °C)
  temperature low R < 830 Ohm
  (correspondingly 2.4 °C)

The temperatures mentioned above are sensor temperatures.
The product temperature is almost by 3 °C lower than the sensor temperature.

The temperature of the cooling compartment base is almost the same as the product temperature.
The deviation of the PTC is +/- 5 Ohm, corrspondingly +/- 0.7 °C

b) Measuring the Peltier current:

The microprocessor measures the current via a measuring resistor and switches it via a transistor as follows:

No effect when
I > 1 A and < 3.3 A
(normal function, transistor is switched due to the cooling compartment temperature).

ON/OFF cycle when
I > 3.3 A and < 4 A.
The current is pulsed in order to guarantee that 3.3 A (effectively) will not be exceeded. The pulse duration depends on the measured current values.

- **OFF when**
  for more than 10 sec.
  I < 1 A or > 4 A.
  The microprocessor activates flashing of the empty indicator LED.

- Immediate switch-off when I > 5 A.
  The microprocessor activates flashing of the empty indicator LED.

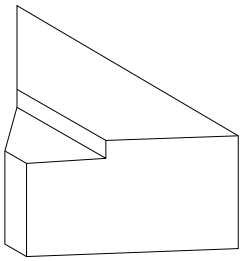
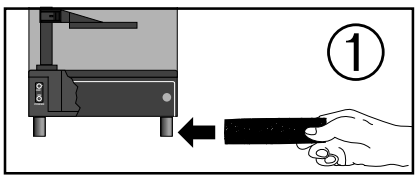
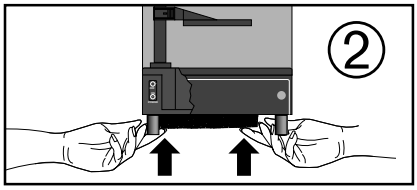
F.5 Technical Specifications

WHAT:	HOW:
Temperature sensor	Triggering temperature cooling compartment: 2.8°C Triggering temperature sensor: 1.7°C
Temperature indicator LED	High temperature: 12.7°C Low temperature: 2.4°C
Fan	Capacity: (national) 220/240 V 50 Hz VDE 115 V 60 Hz UL/CSA 208/240 V 60 Hz UL/CSA
Peltier element	Manufacturer indications

F.6 Options

Not available

F.7 Accessories

WHAT:	FOR:	REQUIRED FOR:
Damping edge for fan	Damping the fan noises	
Air filter	The air filter avoids contamination by dust and grease at the heat sink of the Peltier element. This results in a steady high cooling efficiency.	Air filter with instructions  

G Housing

G.1 Adjustments

–

G.2 Disassemblies

G.2.1 Disassembly of the Front Part

Preparation:

- Switch off the dispenser and disconnect the mains supply.
- Disconnect the dispenser from the water supply.

Disassembly:

- Remove the operating panel cover (**1**) with the screw (**2**). (Fig. 1)
- Remove the front cover and the advertising panel towards the side.

CAUTION: When the front cover is made of glass, there is the danger of being injured due to unauthorized handling or breakage of the glass.

- Remove the cooling compartment lid (**8**). (Fig. 1)
- Remove the housing cover (**9**). (Fig. 1)
- Remove the air chute (**10**). (Fig. 1)
- Remove the rear wall (**3**). (Fig. 1)
- Loosen the cables (**4**, **5**, **6**, **7)** at the control. (Fig. 1)
- Remove the fan (**11**). (Fig. 1)
- Remove the fan console (**12**). (Fig. 1)
- Remove the metal air supply channel (**13**). (Fig. 1)
- Remove the shielding cover (**14**). (Fig. 1)
- Withdraw the temperature sensor.
- Remove the 2 screws (**15**). (Fig. 1)
- Remove the tension rod (**16**), holding the front part tightly. (Fig. 1)
- Remove the 4 cable harnesses towards the front.
- Remove the outlet hose (**17**). (Fig. 1)
- Hold the front part (**18**) with both hands and and unhook it. (Fig. 1)

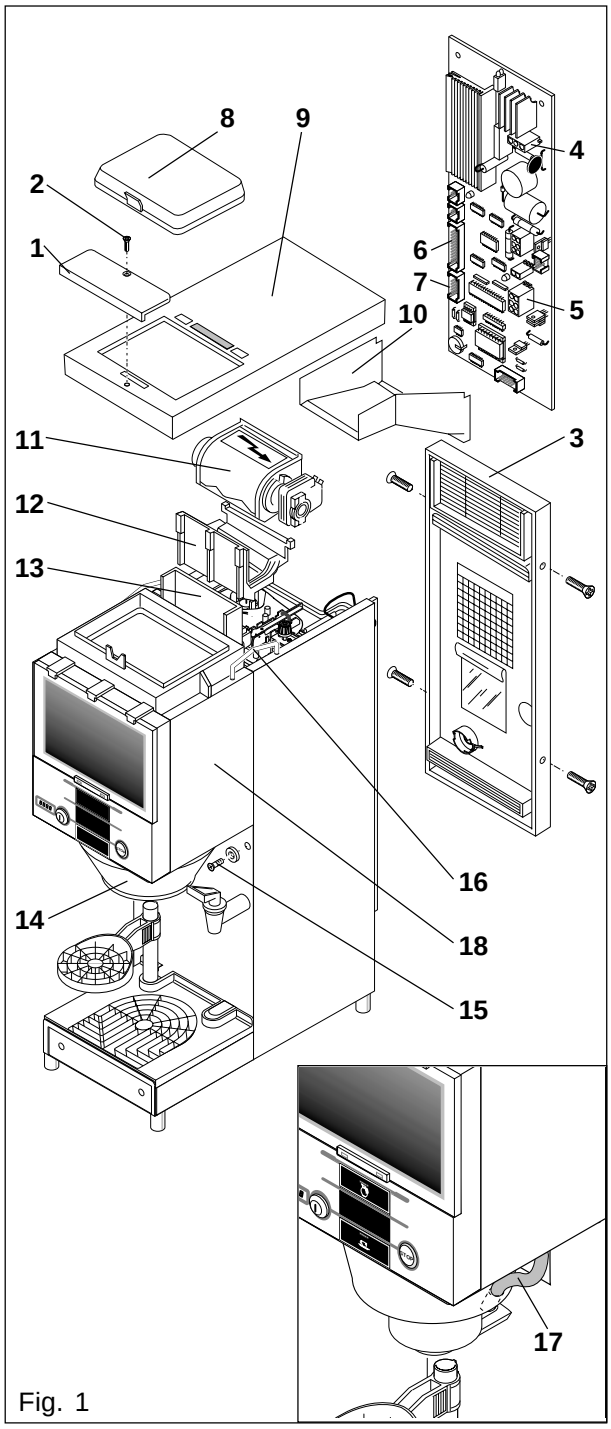


Fig. 1

G.2.2 Disassembly of the Operating Panel

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.

Disassembly:

- Remove the operating panel cover (**1**) with screw (**2**). (Fig. 1)
- Withdraw the front cover and the advertising panel towards the side.

CAUTION: **When the front cover is made of glass, there is the danger of being injured due to unauthorized handling or breaking of the glass.**

- Hold the operating panel (**3**) at the cross-shaped front (**4**) and pull it towards the front and then remove it towards the top. (Fig. 1)

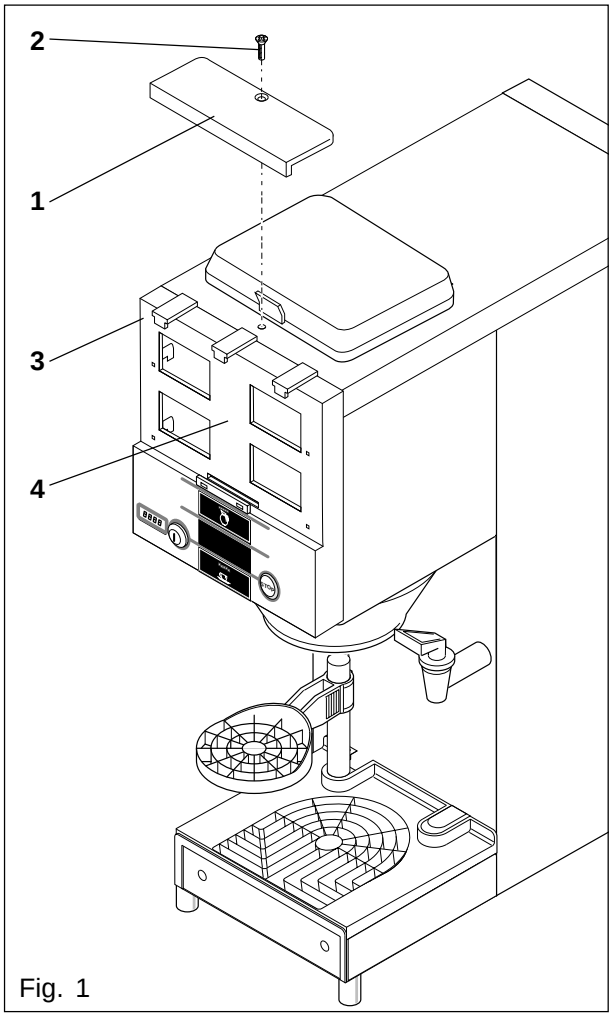


Fig. 1

G.3 Functional Descriptions

G.3.1 Total Overview Housing

- Legend for fig. 1:

  1 Rear wall
  2 Housing
  3 Cooling compartment lid
  4 Operating panel cover
  5 Operating panel
  6 Shielding cover

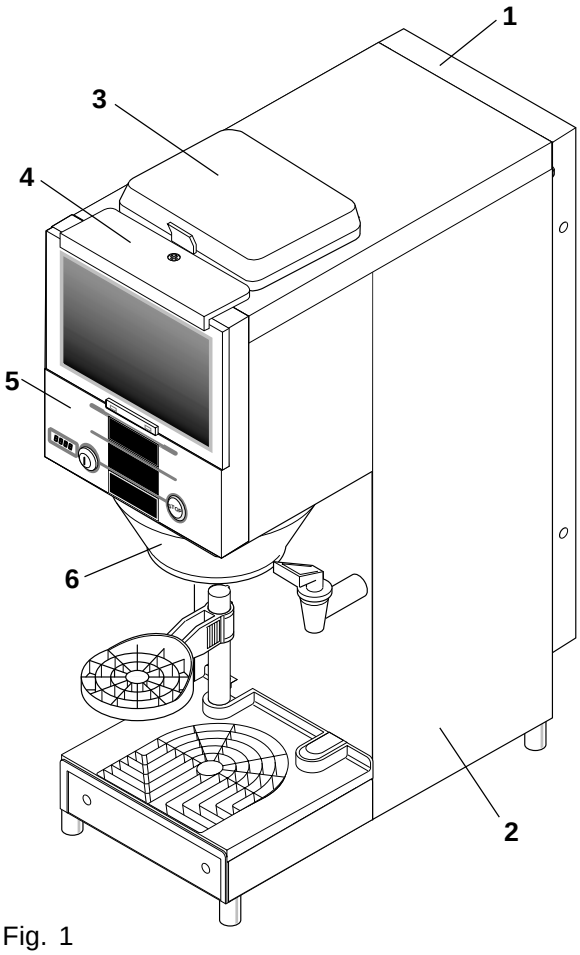


Fig. 1

G.3.2 Function: Housing

Not described

G.4 Electrical Diagrams

–

G.5 Technical Specifications

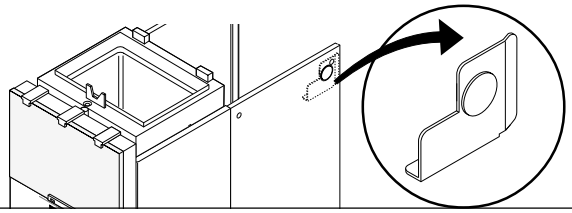
WHAT:	HOW:
Housing/front part	Material: metal Coating: RAL 9005, black, mat
Glass cover	Material: glass *, hardened plexiglass * - GS
Operating panel	Material: ABS *, black
Rear wall	Marerial: ABS *, black

* These parts must not be cleaned in a dishwasher

G.6 Options

WHAT:	FOR:
Housing with opening	Installation of payment systems

G.7 Accessories

WHAT:	FOR:
Advertising panel, front Advertising panel, rear (see spare parts list)	Branding specific for the customer if required
Kit cover with heating plate	Keeping the coffee hot
Kit key switch	Blocking the delivery / reading the counters
Kit housing cover with lock	for locking the cooling compartment
Closing plate for housing	for closing up the cable opening (coin module) 

G.7.1 Cover with Heating Plate

Installation of the kit 'cover with heating plate'

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Loosen the screw (**2**) and remove the operating panel cover (**1**). (Fig. 1)
- Withdraw the glass cover and the advertising panel (**3**) towards the side. (Fig. 1)

CAUTION: When the front cover is made of glass, there is the danger of being injured due to unauthorized handling or breaking of the glass.

- Remove the cooling compartment lid (**4**). (Fig. 1)
- Remove the housing cover (**5**). (Fig. 1)
- Remove the air chute (**6**). (Fig. 1)
- Remove the turn/lift support with the cup carrier (**7**), the drip grid (**8**), the drip tray (**9**) and the pot carrier (**10**). (Fig. 1)

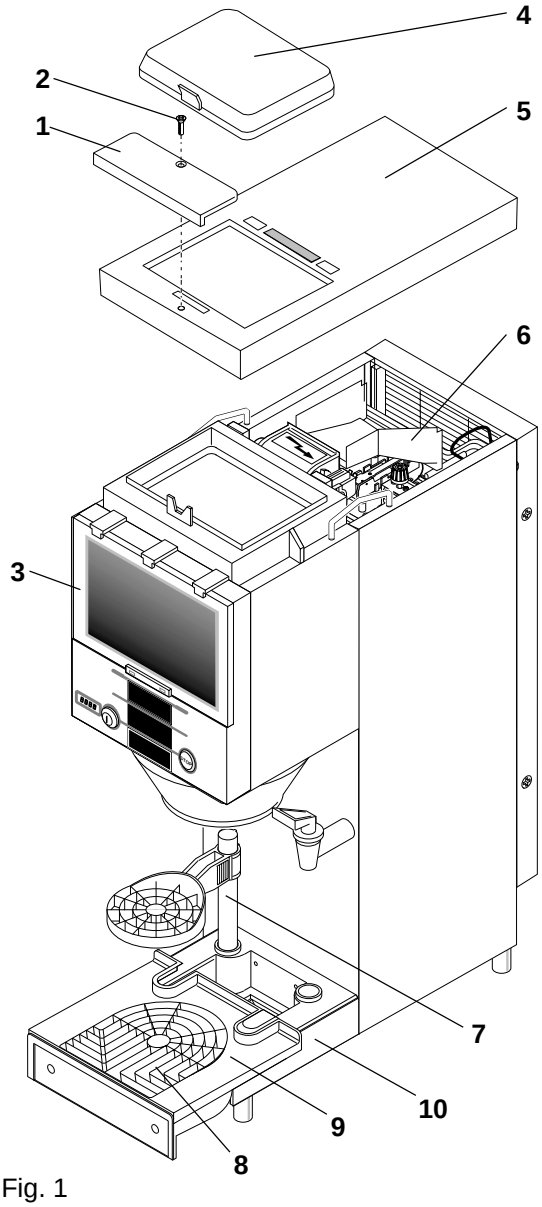


Fig. 1

Installation:

- Remove the adhesive tapes from the plug connections S03/1, S03/2 and S03/3 (**13**), which are placed in the right side plate (**12**). (Fig. 2)
- Remove the dummy cap on the right side of the cup carrier.
- Mount the switches (**14**) and connect the plug connections S03/1 to PIN 1, S03/2 to PIN 2 and S03/3 to PIN 3 of the switches. (Fig. 3)
- Mount the housing cover with heating plate (**17**):
  - connect the plug ST14 (**15**) of the cable harness Flexi to BU14 (**16**) of the heating plate cable harness (Fig. 4)
- Mount the cooling compartment lid (**18**). If required apply the cooling compartment lid with imprints which is included in the kit. (Fig. 3)
- Remount the dispenser completely and check its functioning.

WARNING: **Observe that the ground connection (19) of the housing coverhas been connected during mounting. (Fig. 4)**

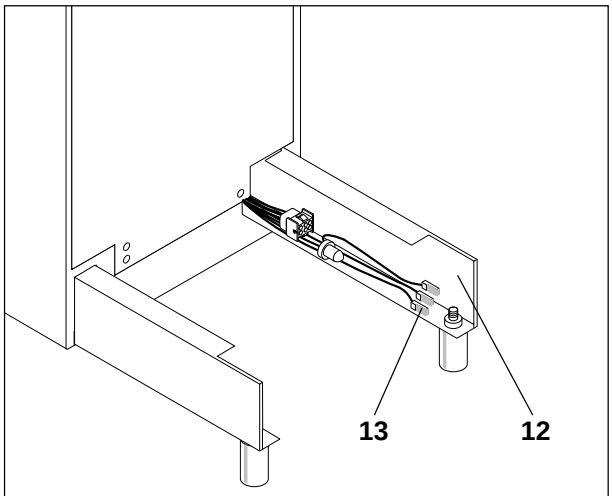


Fig. 2

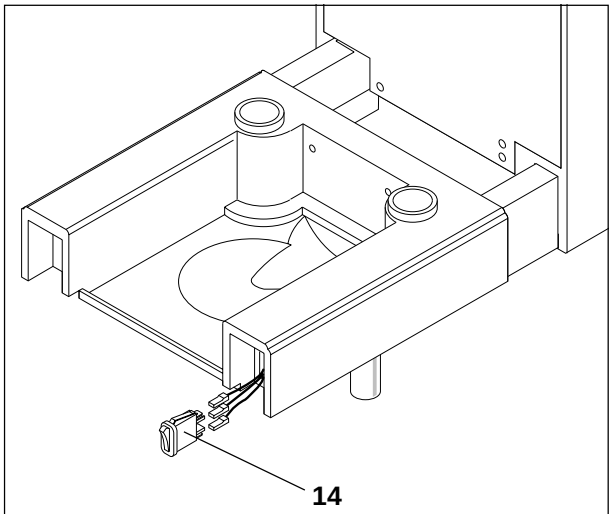


Fig. 3

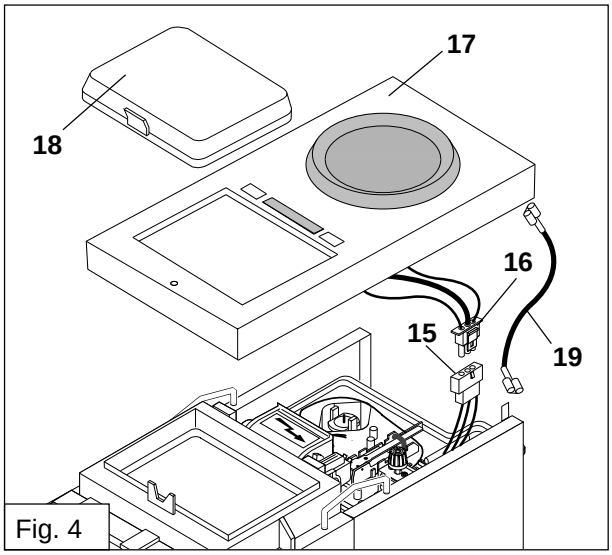


Fig. 4

G.7.2 Key Switch

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.

Installation:

- Remove the operating panel cover (**1**) with the screw (**2**). (Fig. 1)
- Withdraw the front cover and the advertising panel towards the side.

CAUTION: When the front cover is mad e of glass, there is the danger of being inured due to incorrect handling or breaking of the glass.

- Hold the operating panel at the cross-shaped part (**A**) pull it towards the front and remove it towards the top. (Fig. 1)
- Remove the pc board (**3**) with 4 screws. (Fig. 1)
- Remove the stop button from the operating panel with no imprints and mount it to the operating panel with imprints.
- Engage the lock (**4**) into the pc board base and press the locking ring (**5**) downwards until the stop. (Fig. 1)
- Move the safety device for the lock (**6**) (2 parts) over the lock. (Fig. 1)
- Mount the pc board to the new operating panel with imprints.
- Mount the new operating panel to the dispenser.
- Install the advertising panel and the front cover.
- Install the operating panel cover.

The clamping device included in the kit is not required for mounting in this case.

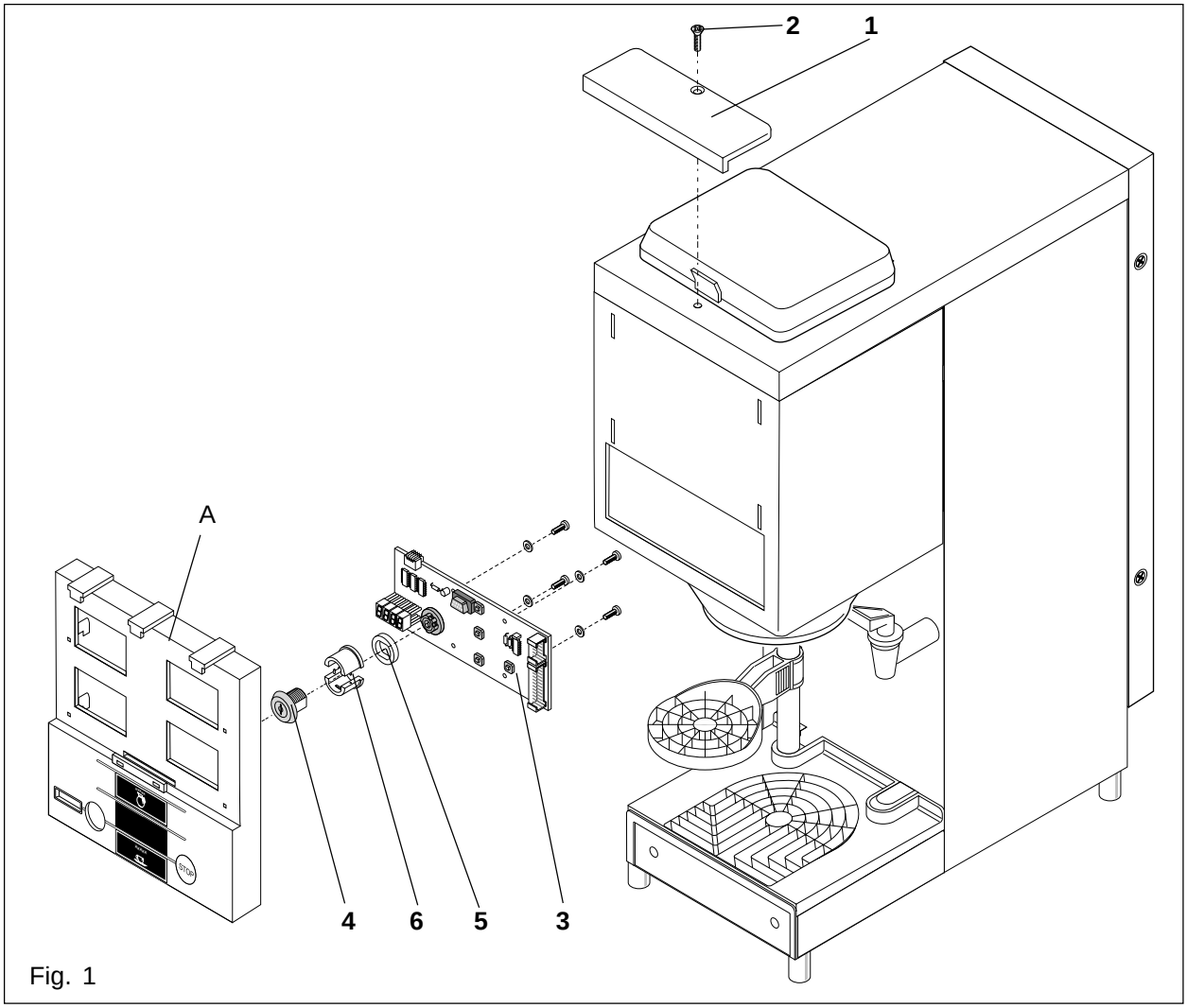


Fig. 1

K Power Supply and Control

K.1 Adjustments

Voltage selector (dispensers for the USA)	208 V, 220 V, 240 V

K.2 Disassemblies

K.2.1 Disassembly of the Power Supply

Preparation:

- Switch off the dispenser and disconnect it from ther mains supply.
- Disconnect the dispenser from the water supply.
- Loosen the screw (**2**) and remove the operating panel cover (**1**). (Fig. 1)
- Withdraw the front cover and the advertising panel (**3**) towards the side. (Fig. 1)

CAUTION: When the front cover is made of glass, there is the danger of being injured due to incorrect handling or breaking of the glass.

- Remove the cooling compartment lid (**4**). (Fig. 1)
- Remove the rear wall (**5**). (Fig. 1)
- Remove the housing cover (**6**). (Fig. 1)
- Remove the air chute (**7**). (Fig. 1)

Disassembly:

- Withdraw the overflow hose (**8**) from the overflow tray (**9**). (Fig. 2)
- Lift the overflow tray towards the top off the outlet elbow (**10**) and withdraw it from the dispenser. (Fig. 2)

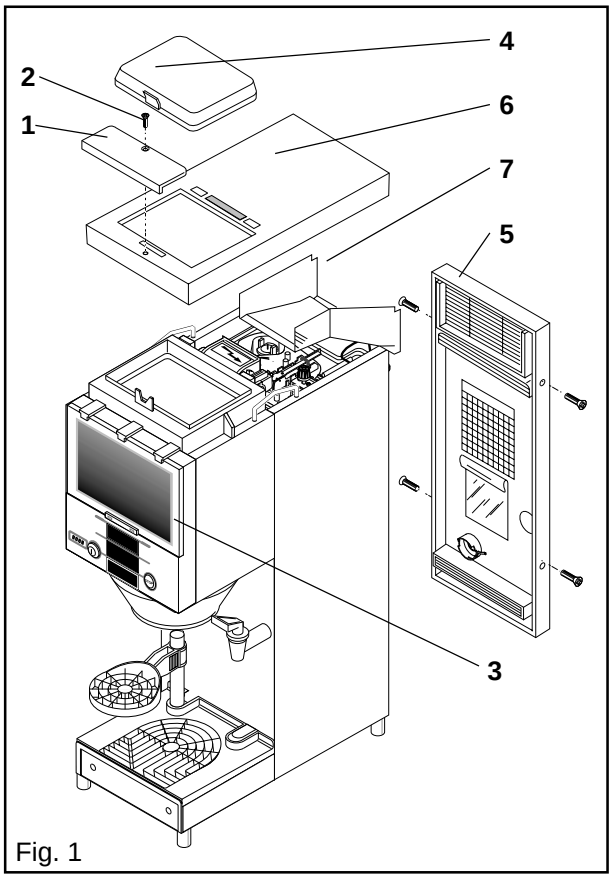


Fig. 1

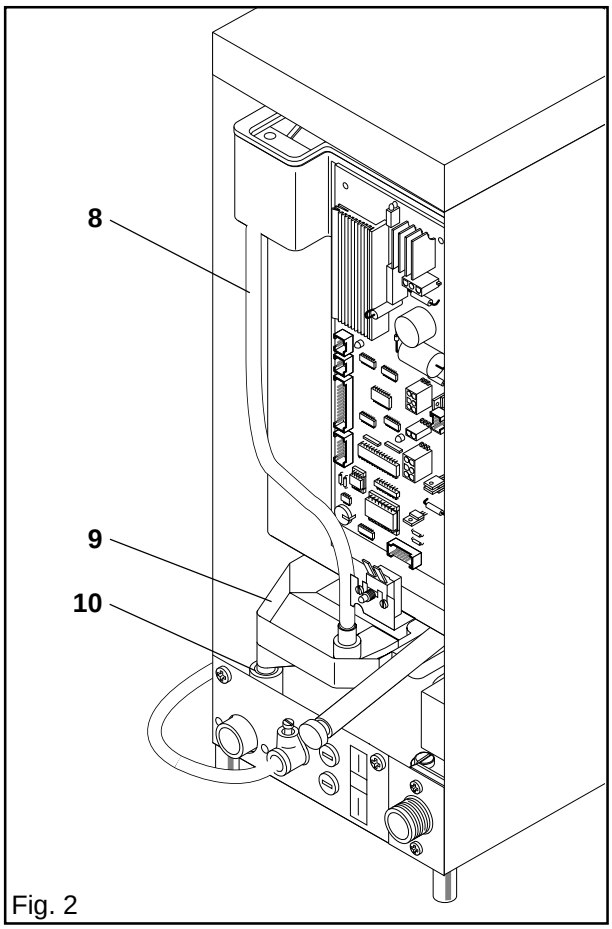


Fig. 2

- Loosen the plug (**1**) of the main cable harness. (Fig. 3)
- Loosen the torx-locking screws (**2**) at the power supply unit (**3**) by using a suitable screwdriver. (Fig. 3)
- Disconnect the supply line (**4**) from the control. (Fig. 3)
- Withdraw the power supply with console from the dispenser.

Assembly:

- Assembly is done in the reverse order.

Disassembly of the power supply cable

Disassembly:

- Disassemble the power supply.
- Loosen the nuts, the screws and the cable clamp (**5**) and remove the ground connection line (**6**). (Fig. 3)
- Remove the power supply line from the terminal clamps (**7**). (Fig. 3)
- Loosen the screw (**8**) of the tension relief. (Fig. 3)
- Remove the power supply cable (**9**). (Fig. 3)

Assembly:

- Assembly is done in the reverse order.

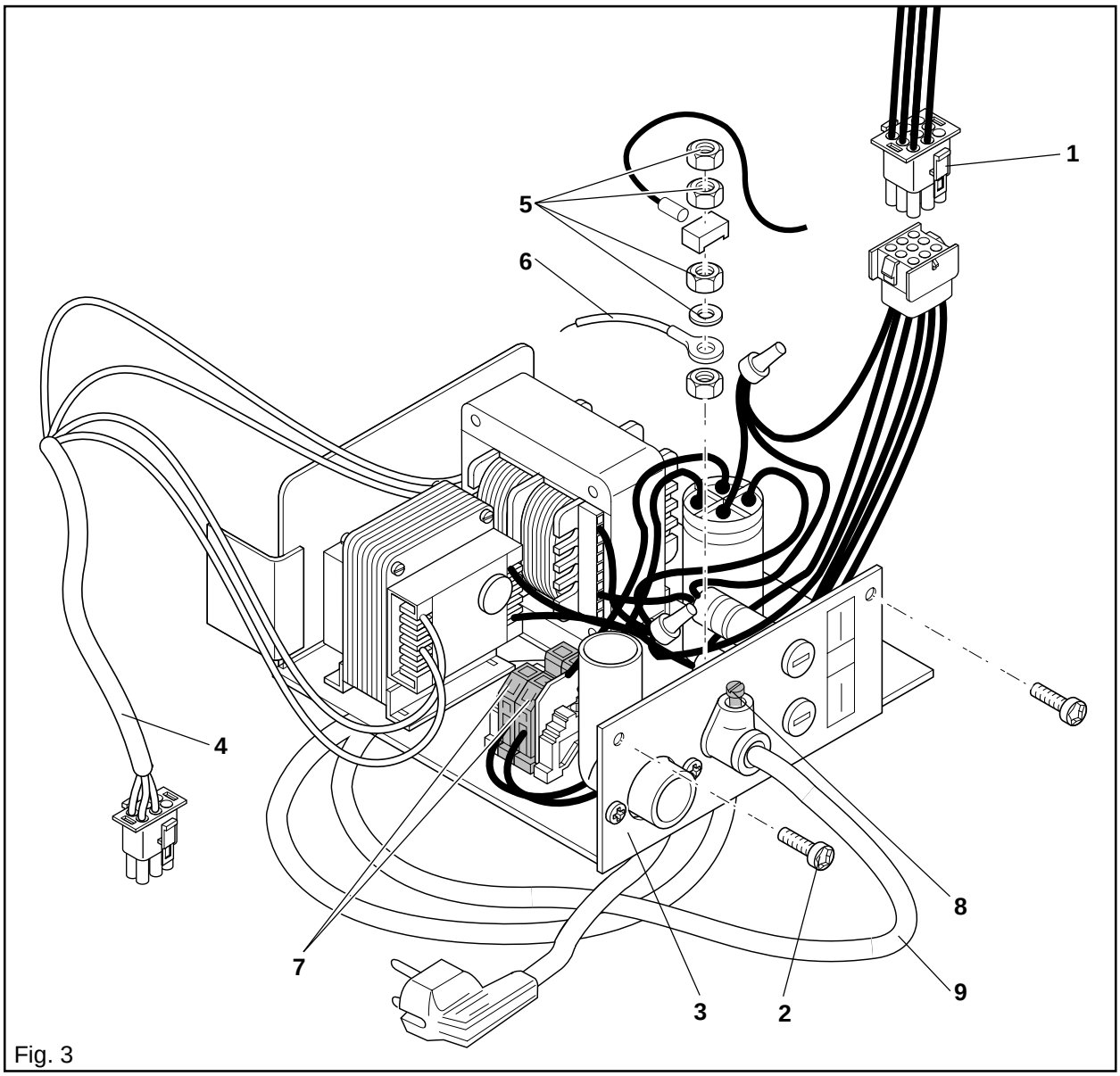


Fig. 3

K.2.2 Disassembly of the Control

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Loosen the screw (**2**) and remove the operating panel cover (**1**). (Fig. 1)
- Withdraw the front cover and the advertising panel (**3**) towards the side. (Fig. 1)

CAUTION: **When the front cover is made of glass, there is the danger of being injured due to incorrect handling or breaking of the glass.**

- Remove the cooling compartment lid (**4**). (Fig. 1)
- Remove the rear wall (**5**). (Fig. 1)
- Remove the housing cover (**6**). (Fig. 1)
- Remove the air chute (**7**). (Fig. 1)

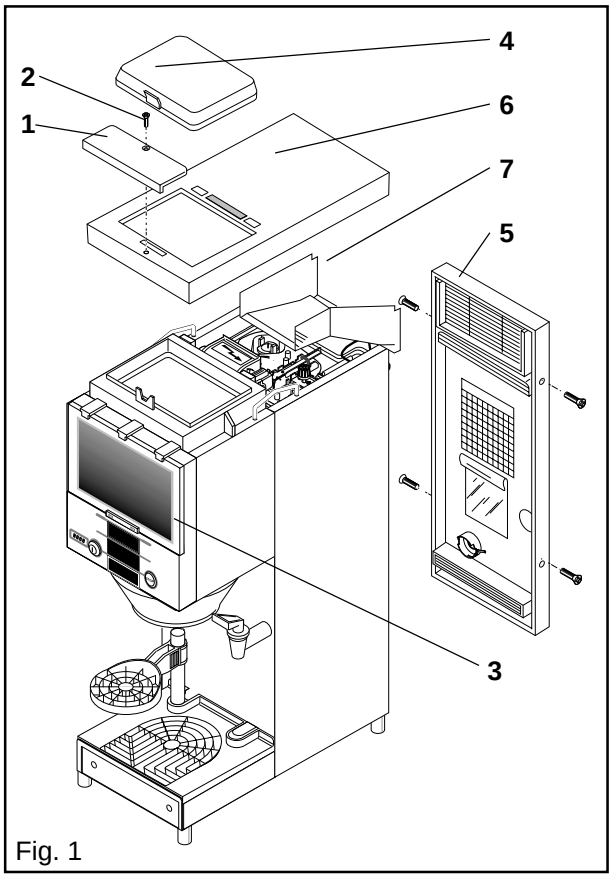


Fig. 1

Disassembly:

CAUTION: **In order to prevent damaging of the pc boards and their components due to electrostatic charge, first touch a metal table or a metal cupboard before touching the pc boards.**

- Disconnect all plug connections from the control (**8**). Hold the control at the bottom, tilt it and remove it. (Fig. 2)
- When the control is equipped with the interface board I^2C espresso/café cool (**10**) loosen the mounting screws (**9**) and remove the additional board. (Fig. 3)

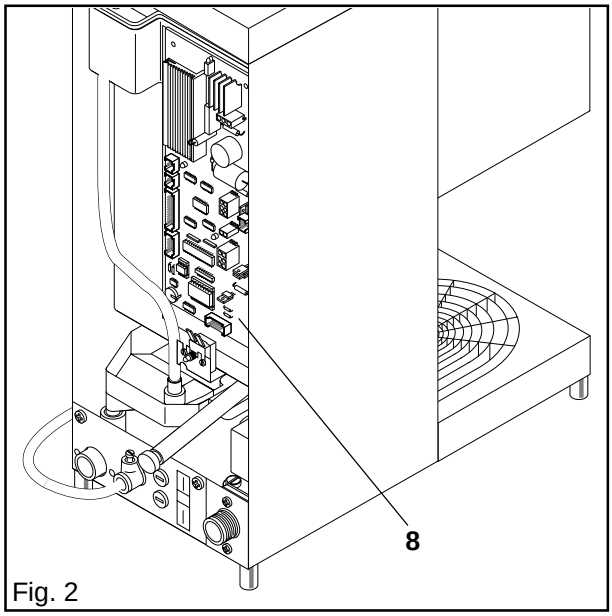


Fig. 2

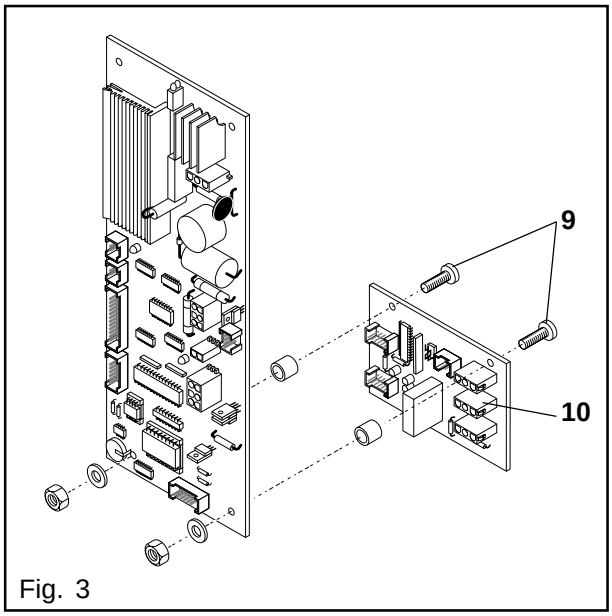


Fig. 3

Assembly:

- Assembly is done in the reversed order.

When mounting the control, it must be observed that the insulating foil (**1**) is suspended between the control (**2**) and the boiler (**3**). (Fig. 4)

When applying the I^2C interface board espresso/café cool place two small insulating foils (**4**) between the interface board and the safety thermostat overflow. (Fig. 5)

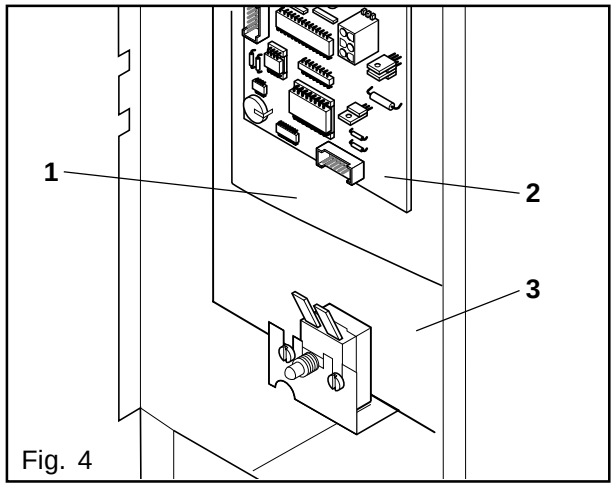


Fig. 4

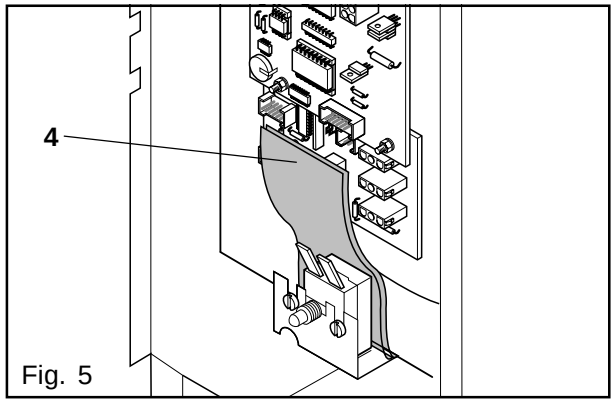


Fig. 5

EPROM and NOVRAM

Disassembly:

- Disassemble the control.
- Remove EPROM (**5**) or NOVRAM (**6**) from the control by means of the pulling-off device. (Fig. 6)

CAUTION: **In order to prevent damaging of the pc boards and their components due to electrostatic charge, first touch a metal table or a metal cupboard before touching the pc boards.**

Assembly:

- Assembly is done in the reverse order.

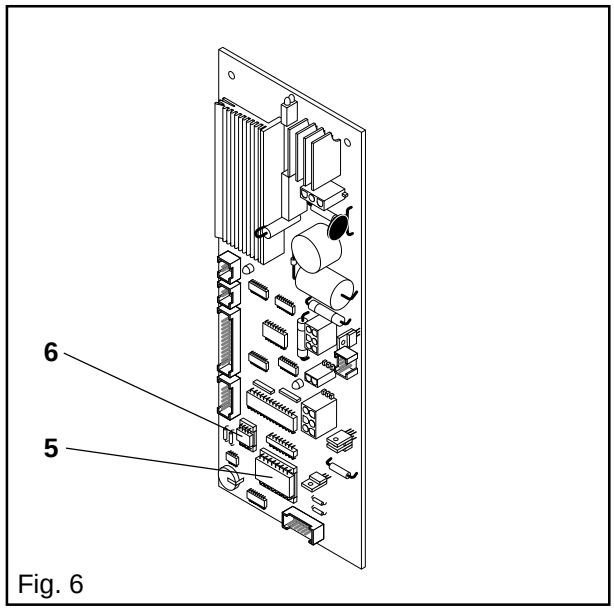


Fig. 6

K.2.3 Disassembly of the Operating Panel Board

Preparation:

- Switch off the dispenser and disconnect it from the mains supply.
- Disconnect the dispenser from the water supply.
- Loosen the screw (**2**) and remove the operating panel cover (**1**). (Fig. 1)
- Remove the front cover and the advertising panel towards the side.

CAUTION: **When the front cover ios made of glass, there is the danger of beinmg injured due to incorrect handling or breaking of the glass.**

Disassembly:

- Hold the operating panel at the cross-shaped part (**3**) pull it towards the front and remove it towards the top. (Fig. 1)

CAUTION: **In order to prevent damaging of the pc boards and their components due to electrostatic charge, first touch a metal table or a metal cupboard before touching the pc boards.**

- Loosen 4 screws (**4**) and remove the board. (Fig. 1)
- Remove the plug connections of the operating panel cable harness (**5**) and of the low temperature and empty indication (**6**). (Fig. 1)

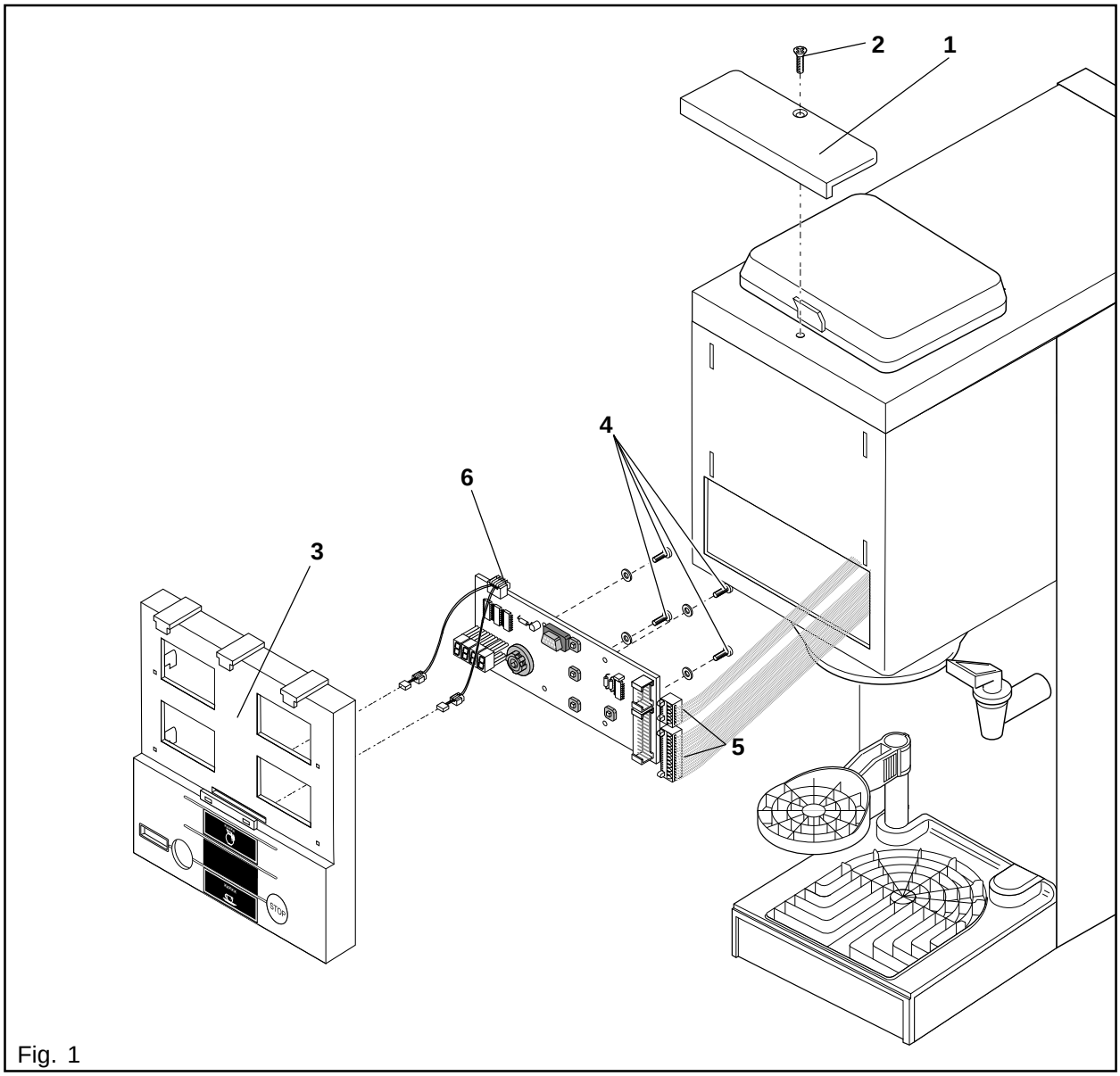


Fig. 1

Disassembly of the low temperature and empty LEDs:

Disassembly:

CAUTION: **In order to prevent damaging of the pc boards and their components due to electrostatic charge, first touch a metal table or a metal cupboard before touching the pc boards.**

- Disassemble the operating panel board.
- Remove the plug connection (**1**) of the LEDs at the operating panel board. (Fig. 2)
- Remove the plug connections (**2**) of the LEDs at the operating panel. (Fig. 2)

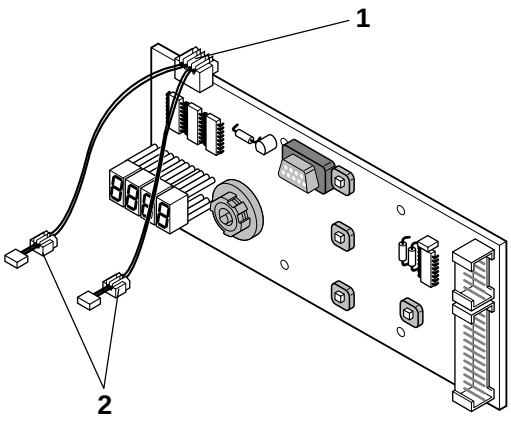
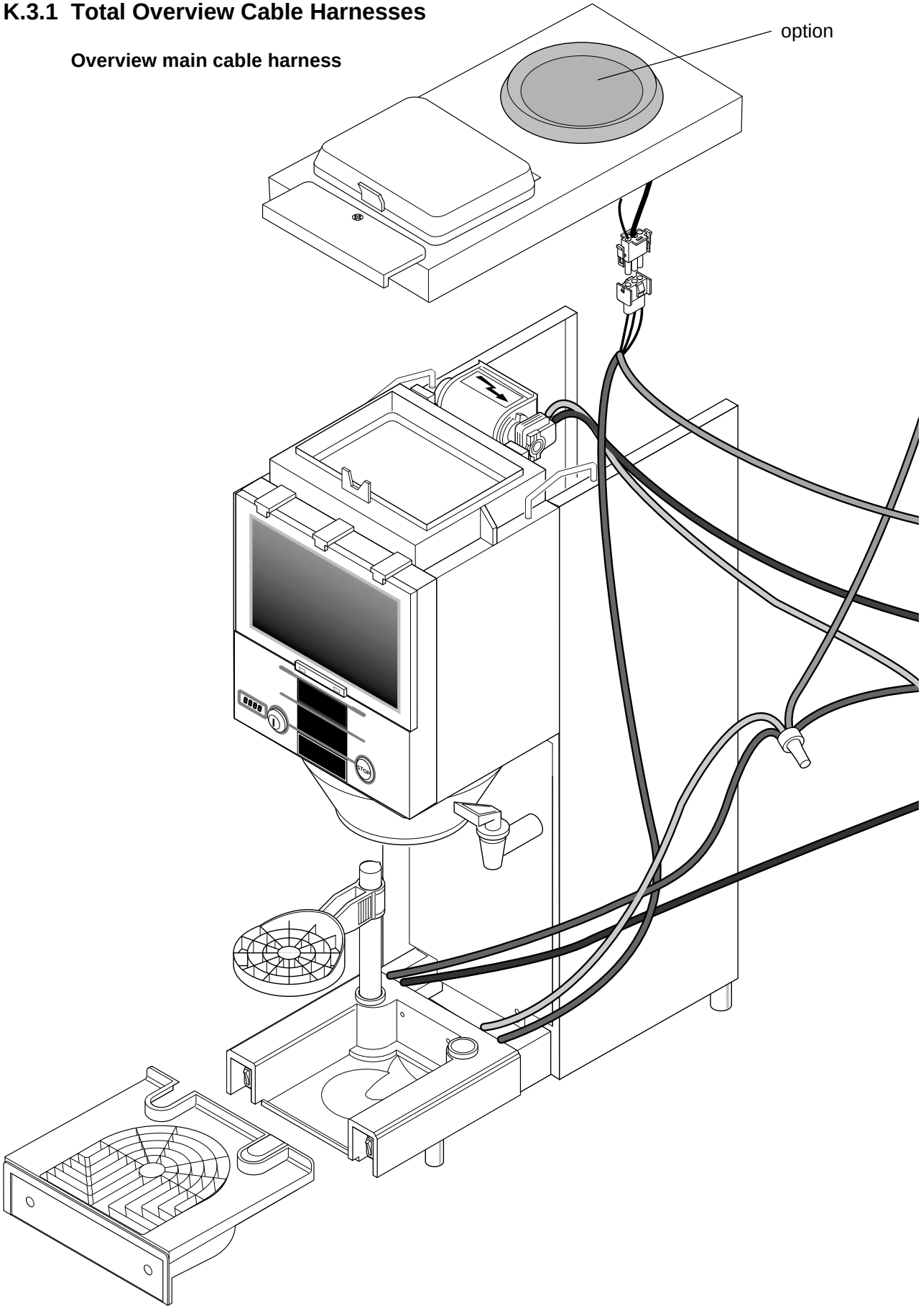


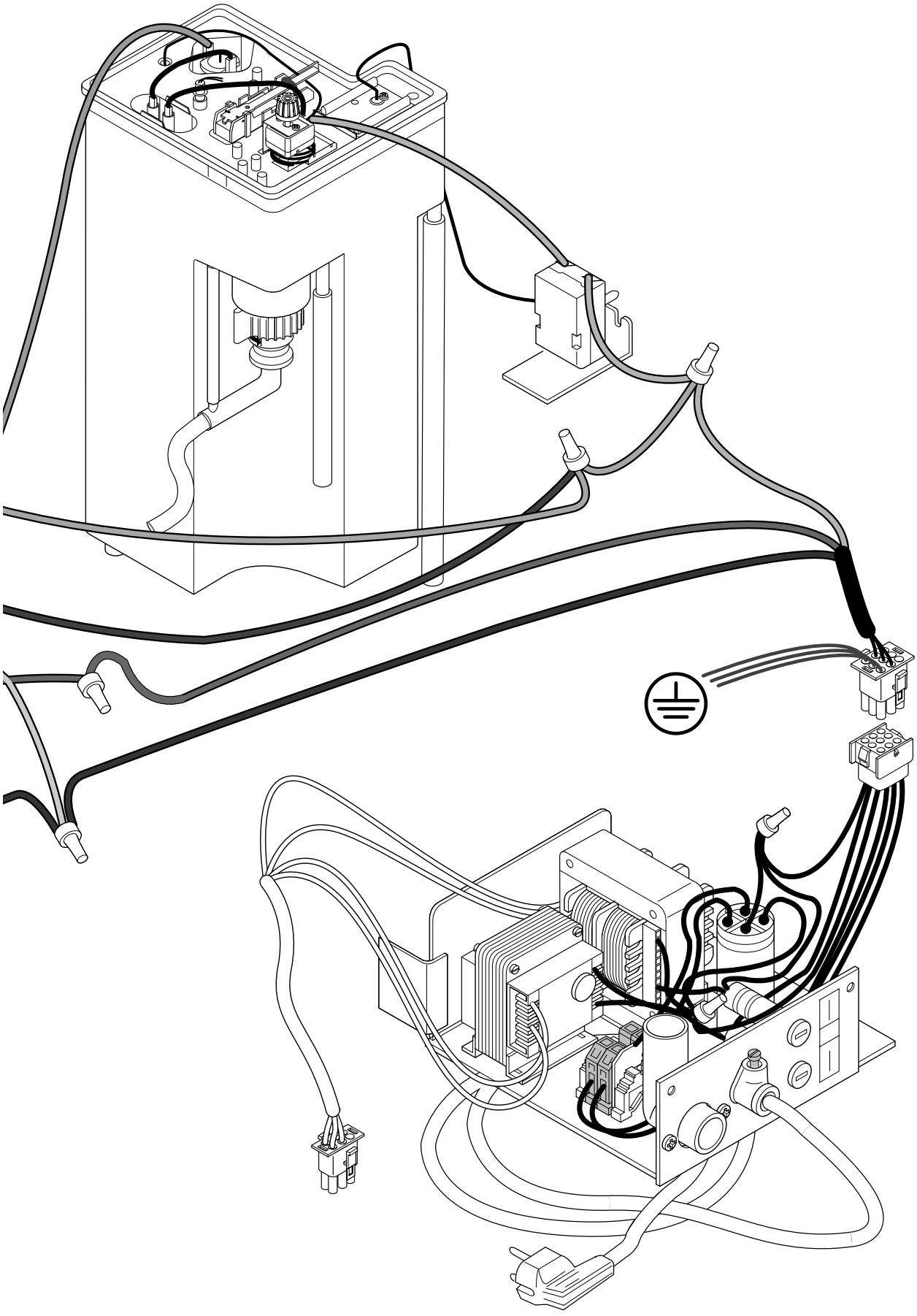
Fig. 2

K.3 Fonal Descriptions

K.3.1 Total Overview Cable Harnesses

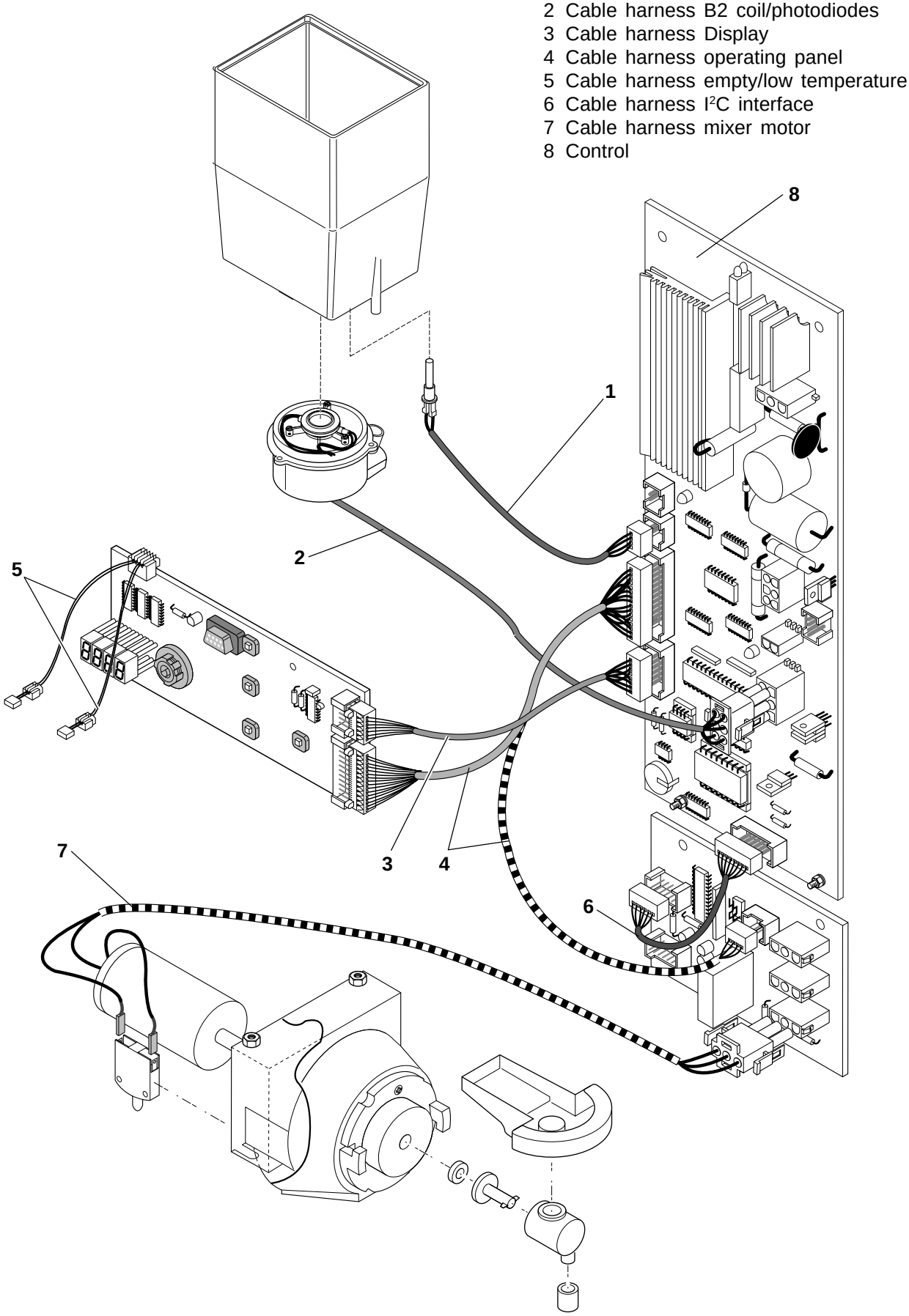
Overview main cable harness





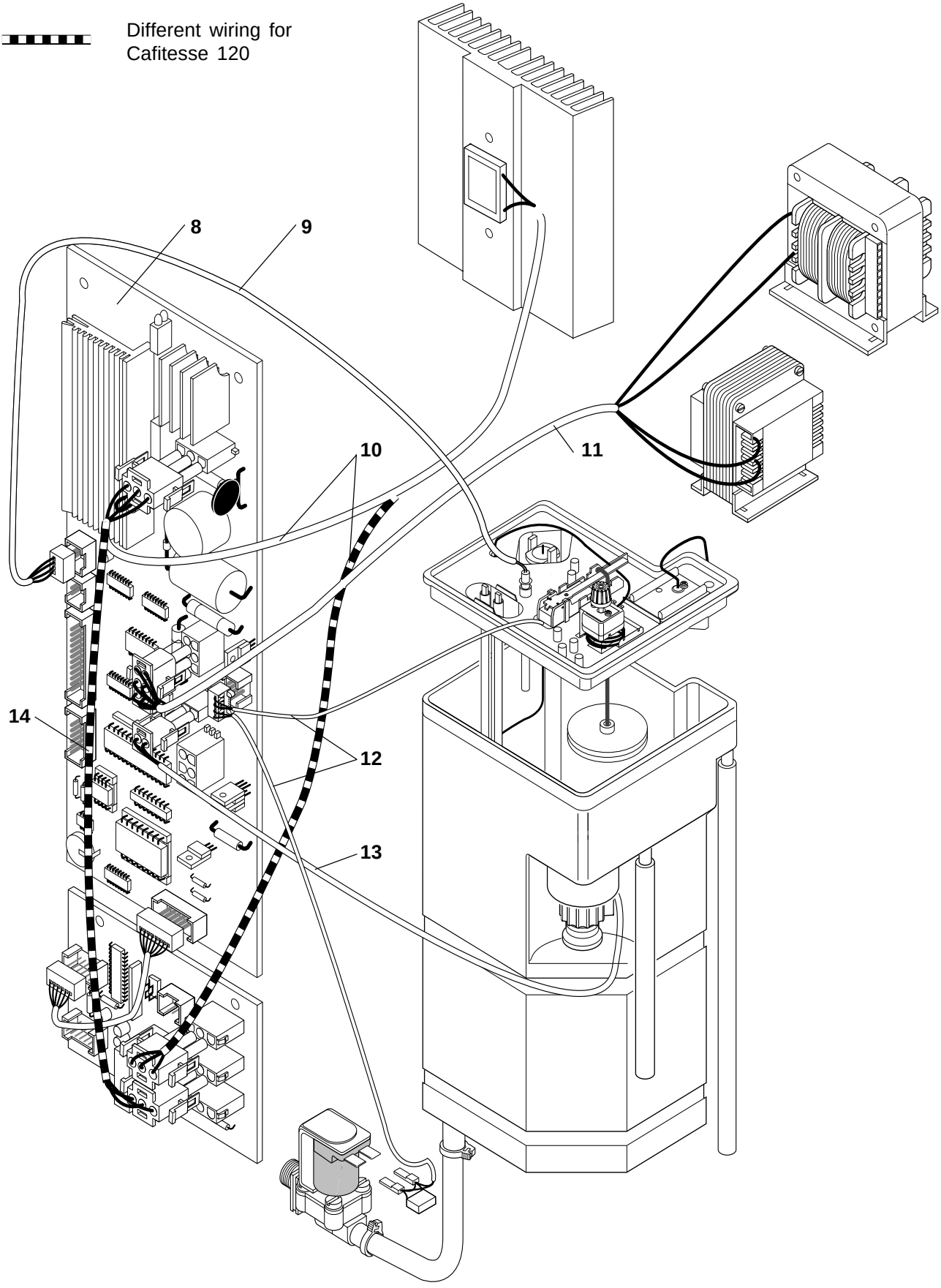
Overview control cable harnesses

Legend:
1 Cable harness temperature sensor
2 Cable harness B2 coil/photodiodes
3 Cable harness Display
4 Cable harness operating panel
5 Cable harness empty/low temperature
6 Cable harness I^2C interface
7 Cable harness mixer motor
8 Control



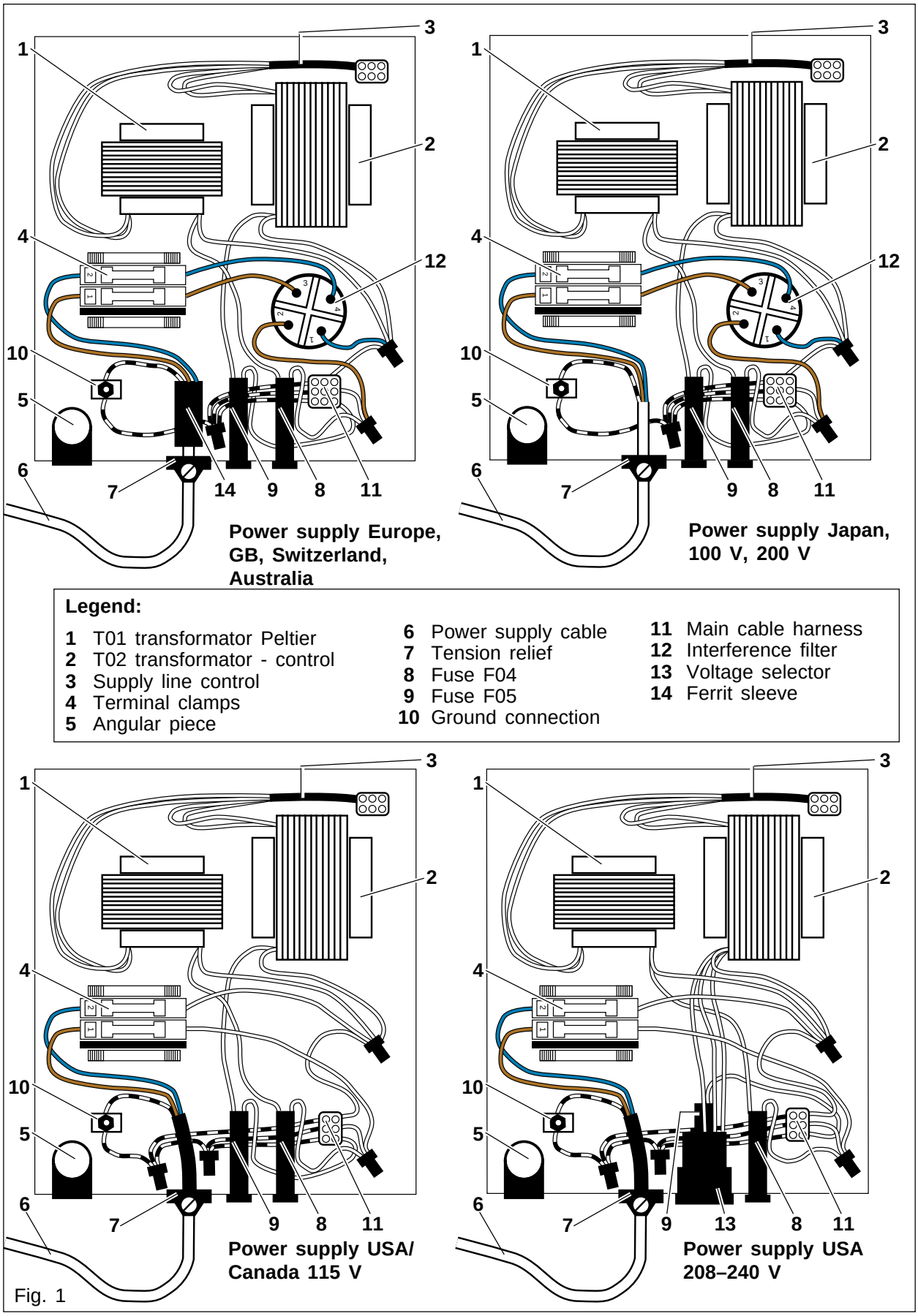
Legend:
9 Cable harness low temperature sensor
10 Cable harness Peltier element
11 Cable harness voltage supply
12 Cable harness inlet valve/float switch
13 Cable harness water coil
14 Peltier element interface

Different wiring for Cafitesse 120



K.3.2 Function: Power Supply

Overview power supply



Legend:

1 T01 transformator Peltier
2 T02 transformator - control
3 Supply line control
4 Terminal clamps
5 Angular piece
6 Power supply cable
7 Tension relief
8 Fuse F04
9 Fuse F05
10 Ground connection
11 Main cable harness
12 Interference filter
13 Voltage selector
14 Ferrit sleeve

Fig. 1

Power supply (Fig. 1)	Transformator T01 (1, Fig. 1)	Transformator T02 (2, Fig. 1)	Power supply cable (6, Fig. 1)	Fuse F04 (8, Fig. 1)	Fuse F05 (9, Fig. 1)	Interference filter (12, Fig. 1)	Voltage selector (13, Fig. 1)	Ferrit sleeve (14, Fig. 1)
220 V Europe	208–240 V/ 13 V	208-220 - 240 V/ 25 V	220 V Europe	0.315 AT	0.5 AT	+	-	+
115 V USA	120 V/ 13 V	115 V/ 25 V	115 V USA	0.75 AT	1 AT	-	-	-
240 V GB	208–240 V/ 13 V	208-220 - 240 V/ 25 V	240 V GB	0.315 AT	0.5 AT	+	-	+
100 V Japan	100 V/ 12 V	100 V/ 24 V	100 V Japan	0.63 AT	1 AT	+	-	-
208–240 V USA	208–240 V/ 13 V	208-220 - 240 V/ 25 V	240 V USA	0.4 AT	0.75 AT	-	+	-
200 V Japan	200 V/ 24 V	200 V/ 11.5 V	200 V Japan	0.315 AT	0.5 AT	+	-	-
220 V Switzerland	208–240 V/ 13 V	208-220 - 240 V/ 25 V	220 V Switzerl.	0.315 AT	0,5 AT	+	-	+
240 V Australia	208–240 V/ 13 V	208-220 - 240 V/ 25 V	220 V Australia	0.315 AT	0,5 AT	+	-	+

- The power supply is equipped with low voltage transformators.
- The transformator T 01 supplies the control with secondary voltage.
- With dispensers suitable for 208–240 V operation delivered in the USA and Canada, the primary supply of the T 02 is connected to a voltage selector.
- The boiler heating operates with mains voltage and is supplied via the main switch of the dispenser. The cooling system fan is directly connected to the mains and operates permanently.
- The primary circuits at the T01 and T02 transformators are protected by the fuses F04 (**1**) and F05 (**2**) which are mounted at the rear of the power supply. (Fig. 2, 3)

The logic and Peltier supply can only be interrupted by disconnecting the dispenser from the mains supply. The supply of the outlet valve, the flexi coil and the Operating panel/interface can be interrupted by means of the main switch.

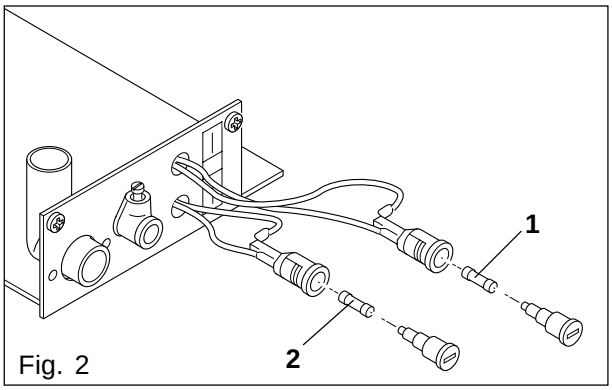


Fig. 2

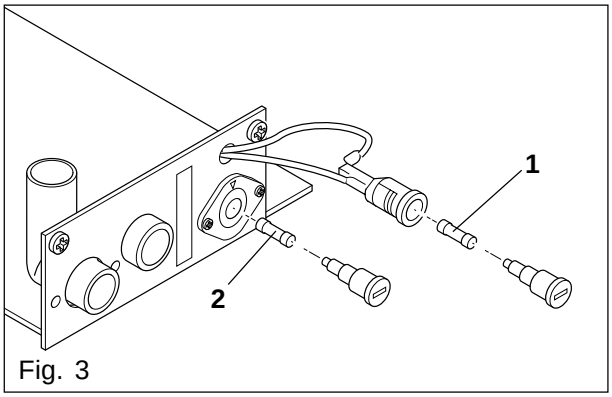


Fig. 3

K.3.3 Function: Control

- The control is supplied by means of the transformator T 01. The secondary voltage is rectified by the bridge rectifier V4020, smoothened by the condensator C6010 and stabilised at 5 V by the voltage regulator N2030.

- The following components are situated on the control:

  EPROM (**1**)
  - contains the software

  NOVRAM (**2**)
  - stores the dispenser settings and the adjusted programming values

  Battery (**3**)
  - 3 V

  LEDs (**4,5**)
  - operation voltage indication
    green (**4**) - 24 V dc voltage
    yellow (**5**) - 12 V dc voltage

  ST 04 (**6**)
  - connection for low temperature sensor

  ST 05 (**7**)
  - connection for cooling compartment temperature sensor

  ST 01 (**8**)
  - connection for operating panel

  ST 02 (**9**)
  - connection for counter

  ST 10 (**10**)
  - connection for I^2C-bus extension

  BU 08 (**11**)
  - connection for photo transistor, transmitter and flexi coil

  BU 09 (**12**)
  - connection for outlet valve

  ST 03 (**13**)
  - connection for inlet valve and for float switch

  BU 07 (**14**)
  - connection for power supply

  BU 06 (**15**)
  - connection for Peltier element

  Fuse Peltier element (**16**)
  - only for control for USA

  Fuse flexi coil (**17**)
  - only on control for USA

- The control regulates and monitors
  - the cooling circuit
  - the beverage delivery
  - the water level
  - the operating panel entry
  - the I^2C-bus extension.

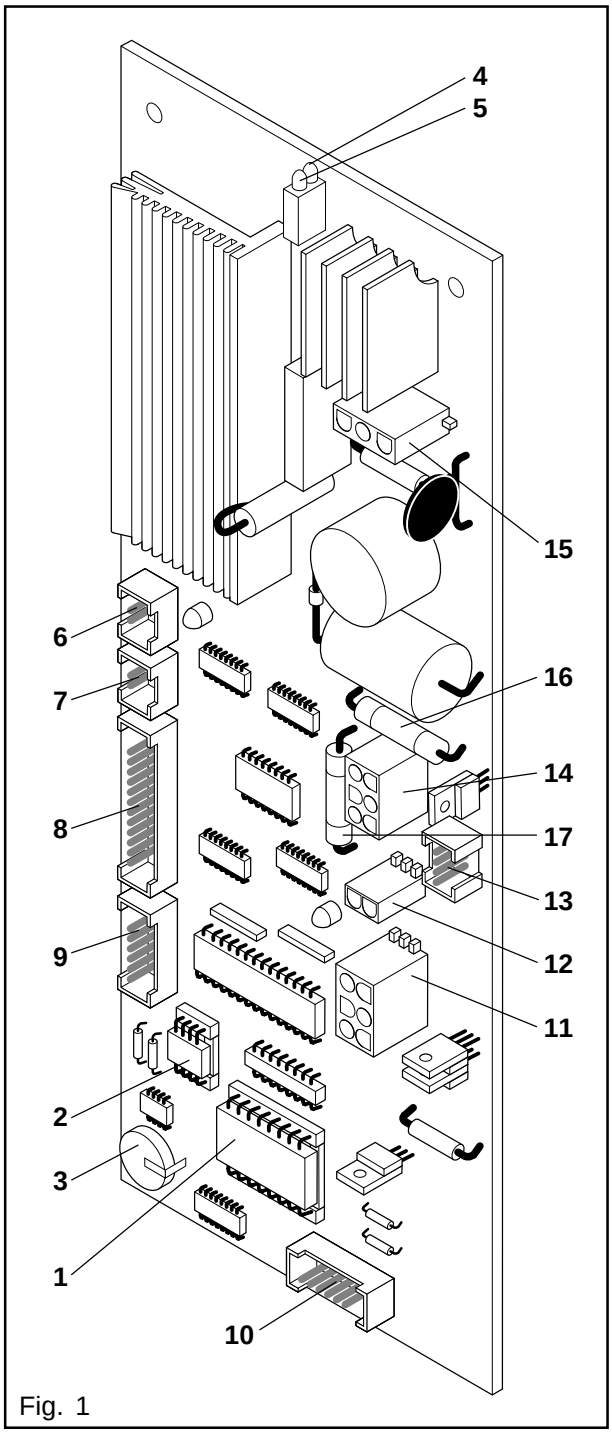


Fig. 1

K.3.4 Function: Operating Panel Board

- The operating panel board (**2**) is connected to the control via the operating panel cable harness (**1**) and the counter cable harness (**10**). (Fig. 1)
  This guarantees the data transfer when programming and when delivering beverages.

- The following components are situated on the operating panel board (Fig. 1):

  ST 17 (**11**)
  - connection for control (cable harness counter)

  ST 20 (**3**)
  - connection for control (cable harness operating panel)

  Selector button (**4**)
  - when these are actuated, the control receives a signal for beverage delivery.

  Stop button (**5**)
  - Each beverage delivery is stopped.

  BU 4 (**6**)
  - connection for low temperature and empty indication

  BU 1 (**7**)
  - connection for Service Device to programme the dispenser

  Key switch (**8**)
  - for reading and resetting the counter when the kit 'key switch' is installed

  Counter display (**9**)
  - indicates the number of beverage portions delivered. The display can be switched off via the programming (see chap. 4)

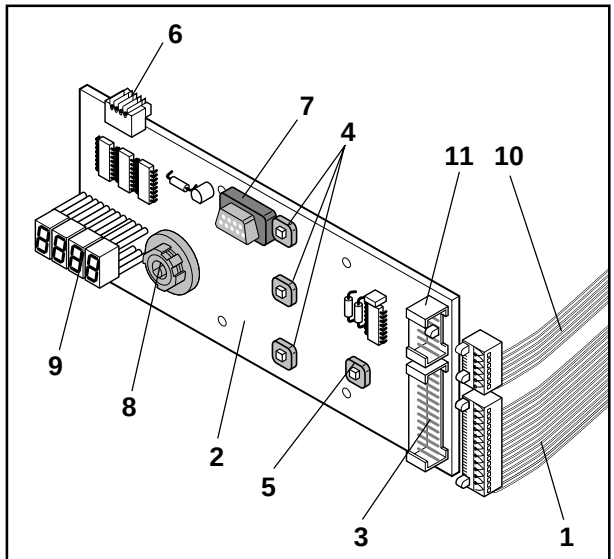


Fig. 1

K.3.5 Function: I²C-Bus Extension Board

- Via the I²C-bus extension board (**1**, Fig. 1) it is possible to connect the following:
  - payment systems
  - café cool
  - espresso
- The following components are situated on the I²C-bus extension board (**1**) (Fig. 1):
  ST 01 (**2**)
  - connection for control

  ST 02 (**3**)
  - connection for cold water valve (café cool)
    connection for coin interface (payment system with Cafitesse 120)

  BU 06 (**4**)
  - connection for cold water valve (café cool)
    connection for mixer (espresso)

  BU 05 (**5**)
  - connection for hot water coil (café cool)
    connection for control (espresso)

  BU 04 (**6**)
  - connection for Peltier element (espresso)

  ST 03 (**7**)
  - connection for operating panel

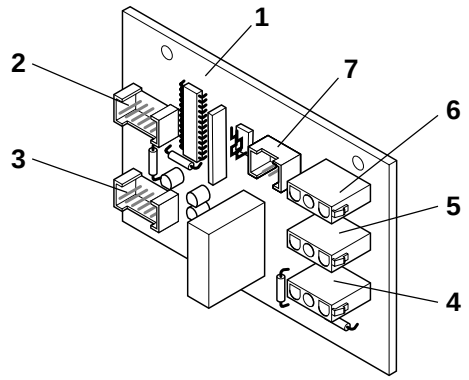


Fig. 1

K.4 Electrical Diagrams

HEIZPLATTE UNTEN
HOTPLATE LOWER

E03 ST13 BU13 S04 H04 X14 ST11 BU11

X13 X11 X10 BU12 ST12 X05 S02 H02 X06 X07

TROCKENGEH-SCHUTZ TEMP. LIMITER S05

HEIZUNG HEATING E01

THERMOSTAT THERMOSTAT S06

ÜBERHITZUNGS-SCHUTZ OVERHEATING CUT-OUT S12

HEIZPLATTE OBEN EIN/AUS HOT PLATE UPPER ON/OFF S03 H03

BU14 ST14 E02 OPTION

HEIZPLATTE OBEN HOTPLATE UPPER

LÜFTER-MOTOR FAN

RÜHRWERKSMOTOR MIXER MOTOR

Sicherheitsschalter

ST22 BU22 ST06 BU06

PELTIER V01 ST06 BU04

ST05 BU05

L1 N1 X01 Z01 X02 X03

NETZLEITUNG MAIN CABLE

F05 0.5AT

F04 0.315AT

13V~ T01

240V 220V 25V~ 0 T02

ST06A BU06 ST07 BU07

STEUERUNGSPLATTE /CONTROL BOARD

D1090 NOV RAM

BETRIEBSSPANNUNGS-ANZEIGE VOLTAGE INDICATOR

ST04 BU04 B02 FÜHLER/SENSOR UNTERTEMPERATUR/ LOW-TEMPERATURE

ST05 BU05 B01

FÜHLER/SENSOR KÜHLUNG/COOLING

P20-10 P20-09 P20-08 P20-07 P20-06 P20-05 P20-04 P20-03 P20-02 P20-01

ST01 BU01

P04-3 P04-4 Low Temperature

P04-2 P04-1 Empty Indicator

BU4 Service Device BU1

ST17 ST17/1 ST17/2 ST17/3 ST17/4 ST17/5

ST20/5 ST20/12 ST20/6 ST20/4 Stop

Operating-Panel

Display

Reset Off On Key-Switch

ST20 P20-01 P20-02 P20-03 P20-04 P20-05 P20-06 P20-07 P20-08 P20-09 P20-10

I2C INTERFACE

BU03 ST03 S7010.2 S7010.1

BU01 ST01 ST02

Y03 ST03 BU03 EINLAUFVENTIL INLET VALVE

SCHWIMMER-SCHALTER FLOAT SWITCH S11

Y01 ST09 BU09 WASSERSPULE WATER COIL

D1040 E-PROM

FOTOTRANSISTOR PHOTOTRANSISTOR B03

ST08 BU08

FLEXISPULE FLEXI COIL Y02

B04 SENDER PHOTODIODE

ST10 BU10

BU02/6(ST17/1) BU02/5(ST17/2) BU02/4(ST17/3) BU02/3(ST17/4) BU02/2(ST17/5)

ST02 BU02

25V~ +25V

13V~ +20,5V STAB.

0V~ +12 V

+5 V STAB.

GND

CONTROL OR SIGNAL

4897	a	Spannungssymbole	24.07.01	RD		SAT 1			
ÄND.-NR.	IND.	BESCHREIBUNG DER ÄNDERUNG	DATUM	NAME	GEPR.	TYP	BAUGR.	LFD.NR.	STK.

ERSETZT d.

ERSATZ f. 2-1195 C

TOLERANZEN

	DATUM	NAME
GEZ.	11.08.97	RD
GEPR.		
GEPR.		

DAGMA GmbH

D-PLAN

VERDRAHTUNG CFT100 ESPRESSO

MASSTAB

BLATT VON

ARTIKEL-NR. H-3076

ZEICH-NUNGS-NR. 2 - 1308a

X13
X11
X10
X01
NETZLEITUNG
MAIN CABLE
Z01
X02
X03
BU12
ST12
F04
0.315AT
F05
0.5AT
X07
X05
X04
S02
H02
X06
M01
M
LÜFTER-
MOTOR
FAN
TROCKENGEH-
SCHUTZ
TEMP. LIMITER
S05
HEIZUNG
HEATING
E01
THERMOSTAT
THERMOSTAT
S06
ÜBERHITZUNGS-
SCHUTZ
OVER HEATING
CUT-OUT
S12
S03
H03
HEIZPLATTE EIN/AUS
HOTPLATE ON/OFF
BU11
OPTION
BU14
ST14
E02
HEIZPLATTE OBEN
HOT PLATE UPPER
T01
13V
~
240V
220V
0
25V
~
T02
PELTIER
V01
ST06 BU06
STEUERUNGSPLATTE
/CONTROL BOARD
D1090
NOV
RAM
BETRIEBSSPANNUNGS-
ANZEIGE
VOLTAGE INDICATOR
ST07 BU07
Y03
ST03 BU03
EINLAUFVENTIL
INLET VALVE
SCHWIMMER-
SCHALTER
FLOAT SWITCH
S11
Y01
ST9A BU09
WASSERSPULE
WATER COIL
D1040
E-PROM
FOTOTRANSISTOR
PHOTOTRANSISTOR
B03
ST08 BU08
FLEXISPULE
FLEXI COIL
Y02
B04
SENDER
PHOTODIODE
ST10
BU10
ANSCHLUSS F. OPTIONEN
CONNECTOR F. OPTIONS
FÜHLER/SENSOR
UNTERTEMPERATUR/
LOW-TEMPERATURE
B02
ST04 BU04
B01
ST05 BU05
FÜHLER/SENSOR
KÜHLUNG/COOLING
P20-10
P20-09
P20-08
P20-07
P20-06
P20-05
P20-04
P20-03
P20-02
P20-01
ST01 BU01
BU02/6(ST17/1)
BU02/5(ST17/2)
BU02/4(ST17/3)
BU02/3(ST17/4)
BU02/2(ST17/5)
ST02 BU02
P04-3
P04-4
Low Temperature
P04-2
P04-1
Empty Indicator
ST17
ST17/1
ST17/2
ST17/3
ST17/4
ST17/5
Service Device
BU4
BU1
Operating-Panel
ST20/5
ST20/12
ST20/6
ST20/4
Stop
Reset
Off
On
Display
Key-Switch
ST20
P20-01
P20-02
P20-03
P20-04
P20-05
P20-06
P20-07
P20-08
P20-09
P20-10

25V~
13V~
0V~
+25V
+20,5V
STAB.
+12 V
+5 V
STAB.
GND
CONTROL OR SIGNAL

4897	a	Spannungssymbole	24.07.01	RD		SAT				
ÄND.-NR.	IND.	BESCHREIBUNG DER ÄNDERUNG	DATUM	NAME	GEPR.	TYP	BAUGR.	LFD.NR.	STK.	

ERSETZT d.
ERSATZ f. 2-1177 C
TOLERANZEN

	DATUM	NAME
GEZ.	11.08.97	RD
GEPR.		
GEPR.		

DAGMA GmbH

D-PLAN

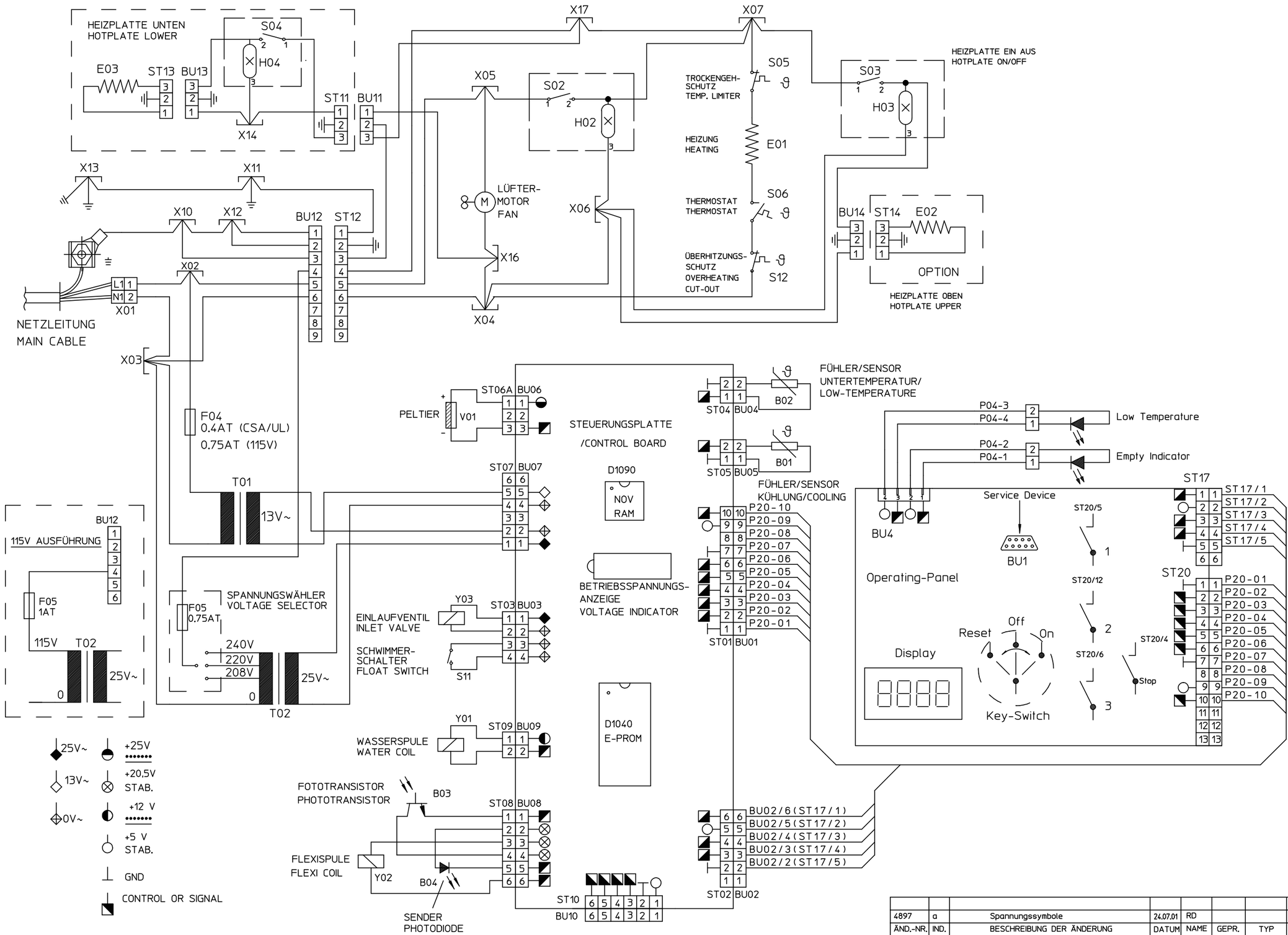
SCHALTPLAN VERDRAHTUNG
EUR. CFT100 MP

MASSTAB

BLATT VON

ARTIKEL-NR. H-3077

ZEICH-NUNGS-NR. 2 - 1306a



4897	a	Spannungssymbole	24.07.01	RD						
ÄND.-NR.	IND.	BESCHREIBUNG DER ÄNDERUNG	DATUM	NAME	GEPR.	TYP	BAUGR.	LFD.NR.	STK.	

ERSETZT d.		DAGMA GmbH	MASSTAB	BLATT VON
ERSATZ f.	2-1176 C			
TOLERANZEN		D-PLAN	ARTIKEL-NR.	H-3078
	DATUM / NAME	Schaltplan Verdrahtung CFT100 UL/CSA MP-SATA07/08/17	ZEICH-NUNGS-NR.	2 - 1305a
GEZ.	11.08.97 RD			
GEPR.				
GEPR.				

HEIZPLATTE UNTEN
HOTPLATE LOWER
OPTION
E03
ST13 BU13
S04
H04
X14
ST11 BU11
X17
X07
X05
S02
H02
TROCKENGEH-SCHUTZ
TEMP. LIMITER
S05
HEIZUNG
HEATING
E01
THERMOSTAT
THERMOSTAT
S06
ÜBERHITZUNGS-SCHUTZ
OVERHEATING
CUT-OUT
S12
S03
H03
HEIZPLATTE EIN/AUS
HOTPLATE ON/OFF
BU14 ST14 E02
OPTION
HEIZPLATTE OBEN
HOTPLATE UPPER
X13
X11
X10
BU12 ST12
X02
L1 N1
X01
NETZLEITUNG
MAIN CABLE
X03
LÜFTER-MOTOR
FAN
X06
X16
X04
F04
0.4AT (CSA/UL)
0.75AT (115V)
T01
13V~
BU12
115V AUSFÜHRUNG
F05
1AT
115V T02 25V~
0
SPANNUNGSWÄHLER
VOLTAGE SELECTOR
F05
0.75AT
240V
220V
208V
25V~
0
T02
25V~
13V~
0V~
+25V
+20,5V
STAB.
+12 V
+5 V
STAB.
GND
CONTROL OR SIGNAL
ST06A BU06
STEUERUNGSPLATTE
/CONTROL BOARD
ST07 BU07
D1090
NOV
RAM
BETRIEBSSPANNUNGS-ANZEIGE
VOLTAGE INDICATOR
EINLAUFVENTIL
INLET VALVE
Y03
ST03 BU03
SCHWIMMER-SCHALTER
FLOAT SWITCH
S11
WASSERSPULE
WATER COIL
Y01
ST09 BU09
D1040
E-PROM
FOTOTRANSISTOR
PHOTOTRANSISTOR
B03
ST08 BU08
FLEXISPULE
FLEXI COIL
Y02
B04
SENDER
PHOTODIODE
ST10
BU10
FÜHLER/SENSOR
UNTERTEMPERATUR/
LOW-TEMPERATURE
ST04 BU04
B02
ST05 BU05
B01
FÜHLER/SENSOR
KÜHLUNG/COOLING
P20-10
P20-09
P20-08
P20-07
P20-06
P20-05
P20-04
P20-03
P20-02
P20-01
ST01 BU01
BU02/6(ST17/1)
BU02/5(ST17/2)
BU02/4(ST17/3)
BU02/3(ST17/4)
BU02/2(ST17/5)
ST02 BU02
P04-3
P04-4
Low Temperature
P04-2
P04-1
Empty Indicator
BU4
Service Device
BU1
Operating-Panel
ST17
ST17/1
ST17/2
ST17/3
ST17/4
ST17/5
ST20/5
1
ST20/12
2
ST20/6
3
ST20/4
Stop
Reset
Off
On
Key-Switch
Display
ST20
P20-01
P20-02
P20-03
P20-04
P20-05
P20-06
P20-07
P20-08
P20-09
P20-10
I2C INTERFACE
RÜHRWERKSMOTOR
MIXER MOTOR
ST22
BU22
ST06
BU06
PELTIER
ST06 BU04
V01
ST05 BU05
BU03 ST03
S7010.2
S7010.1
ST02
BU01 ST01

4897	a	Spannungssymbole	24.07.01	RD						
ÄND.-NR.	IND.	BESCHREIBUNG DER ÄNDERUNG	DATUM	NAME	GEPR.	TYP	BAUGR.	LFD.NR.	STK.	

ERSETZT d.
ERSATZ f. 2-0470
TOLERANZEN

	DATUM	NAME
GEZ.	11.08.97	RD
GEPR.		
GEPR.		

DAGMA GmbH

D-PLAN

VERDRAHTUNG
CFT100 ESPRESSO UL/CSA
SATA18/20

MASSTAB
BLATT VON
ARTIKEL-NR. H-3079
ZEICH-NUNGS-NR. 2 -1303a

HEIZPLATTE UNTEN
HOTPLATE LOWER

S04 H04 E03 ST13 BU13 X14 ST11 BU11

X13 X11 X10 BU12 ST12

Z01 X02 X01

NETZLEITUNG
MAIN CABLE

X03

F05
0.5AT (200V)
1.0AT (100V)

F04
0.315AT (200V)
0.63 AT (100V)

100/200V 13V~ T01

100/200V 25V~ 0 T02

X05 S02 H02 X06

LÜFTER-
MOTOR
FAN

X04

X07

TROCKENGEH-
SCHUTZ
TEMP. LIMITER S05

HEIZUNG
HEATING E01

THERMOSTAT
THERMOSTAT S06

ÜBERHITZUNGS-
SCHUTZ
OVERHEATING
CUT-OUT S12

HEIZPLATTE EIN/AUS
HOTPLATE ON/OFF
S03 H03

BU14 ST14 E02
OPTION
HEIZPLATTE OBEN
HOTPLATE UPPER

RÜHRWERKSMOTOR
MIXER MOTOR
M ST22 BU22 ST06 BU06

PELTIER
ST06 BU04 V01

ST06A BU06

STEUERUNGSPLATTE
/CONTROL BOARD

ST07 BU07

D1090
NOV
RAM

BETRIEBSSPANNUNGS-
ANZEIGE
VOLTAGE INDICATOR

D1040
E-PROM

EINLAUFVENTIL
INLET VALVE Y03 ST03 BU03

SCHWIMMER-
SCHALTER
FLOAT SWITCH S11

WASSERSPULE
WATER COIL Y01 ST09 BU09

FOTOTRANSISTOR
PHOTOTRANSISTOR B03 ST08 BU08

FLEXISPULE
FLEXI COIL Y02

B04

SENDER
PHOTODIODE

ST10 BU10

FÜHLER/SENSOR
UNTERTEMPERATUR/
LOW-TEMPERATURE
B02 ST04 BU04

B01 ST05 BU05

FÜHLER/SENSOR
KÜHLUNG/COOLING
P20-10 P20-09 P20-08 P20-07 P20-06 P20-05 P20-04 P20-03 P20-02 P20-01
ST01 BU01

BU02/6(ST17/1)
BU02/5(ST17/2)
BU02/4(ST17/3)
BU02/3(ST17/4)
BU02/2(ST17/5)
ST02 BU02

P04-3 P04-4 Low Temperature
P04-2 P04-1 Empty Indicator

BU4

Service Device
BU1

Operating-Panel

Display 8888

Reset Off On
Key-Switch

ST20/5 1
ST20/12 2
ST20/6 3
ST20/4 Stop

ST17
ST17/1 ST17/2 ST17/3 ST17/4 ST17/5

ST20
P20-01 P20-02 P20-03 P20-04 P20-05 P20-06 P20-07 P20-08 P20-09 P20-10

I2C INTERFACE
BU03 ST03 S7010.2 S7010.1

ST05 BU05

BU01 ST01

ST02

25V~ +25V
13V~ +20,5V STAB.
0V~ +12 V
+5 V STAB.
GND
CONTROL OR SIGNAL

4497	a	Spannungssymbole	24.07.01	RD		SAT 1				
ÄND.-NR.	IND.	BESCHREIBUNG DER ÄNDERUNG	DATUM	NAME	GEPR.	TYP	BAUGR.	LFD.NR.	STK.	

ERSETZT d.
ERSATZ f. 2-0471
TOLERANZEN

	DATUM	NAME
GEZ.	11.08.97	RD
GEPR.		
GEPR.		

DAGMA GmbH

D-PLAN

VERDRAHTUNG CFT100
ESPRESSO JAPAN

MASSTAB
BLATT VON
ARTIKEL-NR. H-3080
ZEICH-NUNGS-NR. 2 - 1304a

X13
X11
X07
X05
S02
S03
HEIZUNG EIN/AUS
HEATING ON/OFF
H02
H03
HAUPTSCHALTER
MAINSWITCH
HEIZPLATTE OBEN
EIN/AUS
HOT PLATE UPPER
ON/OFF
X10
BU12
ST12
S05
BU11
M01
M
LÜFTER-
MOTOR
FAN
X06
TROCKENGEH-
SCHUTZ
TEMP. LIMITER
Z01
X02
HEIZUNG
HEATING
E01
BU14
HEIZPLATTE OBEN
HOT PLATE UPPER
L1 1
N1 2
X01
NETZLEITUNG
MAIN CABLE
X03
S06
THERMOSTAT
THERMOSTAT
ÜBERHITZUNGS-
SCHUTZ
OVER HEATING
CUT-OUT
S12
F04
0.315AT
F05
0.5AT
X04
T01
13V~
ST06 BU06
PELTIER
V01
STEUERUNGSPLATTE
/CONTROL BOARD
FÜHLER/SENSOR
UNTERTEMPERATUR/
LOW-TEMPERATURE
B02
ST04 BU04
B01
ST05 BU05
FÜHLER/SENSOR
KÜHLUNG/COOLING
D1090
NOV
RAM
ST07 BU07
P20-10
P20-09
P20-08
P20-07
P20-06
P20-05
P20-04
P20-03
P20-02
P20-01
ST01 BU01
240V
220V
0
25V~
T02
Y03
ST03 BU03
EINLAUFVENTIL
INLET VALVE
SCHWIMMER-
SCHALTER
FLOAT SWITCH
S11
BETRIEBSSPANNUNGS-
ANZEIGE
VOLTAGE INDICATOR
Y01
ST09 BU09
WASSERSPULE
WATER COIL
D1040
E-PROM
FOTOTRANSISTOR
PHOTOTRANSISTOR
B03
ST08 BU08
FLEXISPULE
FLEXI COIL
Y02
B04
SENDER
PHOTODIODE
ST10
BU10
ANSCHLUSS F. OPTIONEN
CONNECTOR F. OPTIONS
BU02/6(ST17/1)
BU02/5(ST17/2)
BU02/4(ST17/3)
BU02/3(ST17/4)
BU02/2(ST17/5)
ST02 BU02
P04-3
P04-4
Low Temperature
P04-2
P04-1
Empty Indicator
ST17
ST17/1
ST17/2
ST17/3
ST17/4
ST17/5
Service Device
BU4
BU1
ST20/5
Operating-Panel
ST20/12
ST20
P20-01
P20-02
P20-03
P20-04
P20-05
P20-06
P20-07
P20-08
P20-09
P20-10
Reset
Off
On
ST20/4
Stop
Display
ST20/6
Key-Switch

25V~ +25V
13V~ +20,5V STAB.
0V~ +12 V
+5 V STAB.
GND
CONTROL OR SIGNAL

4897	a	Spannungssymbole	24.07.01	RD		SAT				
ÄND.-NR.	IND.	BESCHREIBUNG DER ÄNDERUNG	DATUM	NAME	GEPR.	TYP	BAUGR.	LFD.NR.	STK.	

ERSETZT d.
ERSATZ f. 2-1180 D
TOLERANZEN

	DATUM	NAME
GEZ.	11.08.97	RD
GEPR.		
GEPR.		

DAGMA GmbH

D-PLAN

SCHALTPLAN VERDRAHTUNG
CFT100 TANK TOP EUR

MASSTAB
BLATT VON
ARTIKEL-NR. H-3081
ZEICH-NUNGS-NR. 2 - 1307a

HEIZPLATTE UNTEN
HOTPLATE LOWER

S04 H04 E03 ST13 BU13 X14 ST11 BU11

X07 S05 TROCKENGEH-SCHUTZ TEMP. LIMITER

HEIZUNG HEATING E01

THERMOSTAT THERMOSTAT S06

ÜBERHITZUNGS-SCHUTZ OVERHEATING CUT-OUT S12

X05 S02 H02 X06

S03 H03 HEIZPLATTE OBEN EIN/AUS HOTPLATE UPPER ON/OFF

BU14 ST14 E02 OPTION HEIZPLATTE OBEN HOTPLATE UPPER

WASSERSPULE KALT WATER COIL COLD Y05 S 30 FL. KALTWASSER COLD WATER C. F.

X13 X11 X10 BU12 ST12 X04

LÜFTER-MOTOR FAN M

Z01 X02 X01 L1 N

NETZLEITUNG MAIN CABLE

X03

F05 0.5AT (200V) 1.0AT (100V)

F04 0.315AT (200V) 0.63 AT (100V)

100/200V 13V~ 0 T01

100/200V 25V~ 0 T02

PELTIER V01 ST06 BU06

STEUERUNGSPLATTE /CONTROL BOARD

ST07 BU07

D1090 NOV RAM

BETRIEBSSPANNUNGS-ANZEIGE VOLTAGE INDICATOR

EINLAUFVENTIL INLET VALVE Y03 ST03 BU03

SCHWIMMER-SCHALTER FLOAT SWITCH S11

ST9A BU09

D1040 E-PROM

FOTOTRANSISTOR PHOTOTRANSISTOR B03 ST08 BU08

FLEXISPULE FLEXI COIL Y02 B04 SENDER PHOTODIODE

ST10 BU10

FÜHLER/SENSOR UNTERTEMPERATUR/ LOW-TEMPERATURE B02 ST04 BU04

B01 ST05 BU05

FÜHLER/SENSOR KÜHLUNG/COOLING

P20-10 P20-09 P20-08 P20-07 P20-06 P20-05 P20-04 P20-03 P20-02 P20-01 ST01 BU01

BU02/6(ST17/1) BU02/5(ST17/2) BU02/4(ST17/3) BU02/3(ST17/4) BU02/2(ST17/5) ST02 BU02

P04-3 P04-4 Low Temperature

P04-2 P04-1 Empty Indicator

BU4

Service Device BU1

Operating-Panel

Display 8888

Reset Off On Key-Switch

ST20/5 1 ST20/12 2 ST20/6 3 ST20/4 Stop

ST17 ST17/1 ST17/2 ST17/3 ST17/4 ST17/5

ST20 P20-01 P20-02 P20-03 P20-04 P20-05 P20-06 P20-07 P20-08 P20-09 P20-10

I2C INTERFACE

ST06 BU06 BU04 ST05 BU05 BU03 ST03 S7010.2 S7010.1 BU01 ST01 ST02 BU02

25V~ +25V

13V~ +20,5V STAB.

0V~ +12 V

+5 V STAB.

GND

CONTROL OR SIGNAL

Y01 ST09 BU9A

WASSERSPULE HEISS WATER COIL HOT

4897	a	Spannungssymbole	24.07.01	RD		SAT 1			
ÄND.-NR.	IND.	BESCHREIBUNG DER ÄNDERUNG	DATUM	NAME	GEPR.	TYP	BAUGR.	LFD.NR.	STK.

ERSETZT d.

ERSATZ f. 2-1196 C

TOLERANZEN

	DATUM	NAME
GEZ.	11.08.97	RD
GEPR.		
GEPR.		

DAGMA GmbH

MASSTAB

BLATT VON

D-PLAN

ARTIKEL-NR. H-3082

VERDRAHTUNG CFT100 HEISS-KALT

ZEICH-NUNGS-NR. 2 - 1309a

X13 X11 X17 X07 X05 X10 X12 BU12 ST12 X02 X01 X03 X16 X04 X06 X14

S02 HAUPTSCHALTER MAINSWITCH H02 S03 H03 HEIZUNG EIN/AUS HEATING ON/OFF

S05 TROCKENGEH-SCHUTZ TEMP. LIMITER HEIZUNG HEATING E01 S06 THERMOSTAT THERMOSTAT ÜBERHITZUNGS-SCHUTZ OVER HEATING CUT-OUT S12

M01 LÜFTER-MOTOR FAN

HEIZPLATTE OBEN EIN/AUS HOTPLAT UPPER ON/OFF

BU14 HEIZPLATTE OBEN HOTPLATE UPPER

BU11 ST11 S04 H04 BU13 ST13 E03 HEIZPLATTE UNTEN HOT PLATE LOWER

NETZLEITUNG MAIN CABLE

F04 0.4AT (CSA/UL) 0.75AT (115V)

T01 13V~

PELTIER V01 ST06 BU06

STEUERUNGSPLATTE /CONTROL BOARD

D1090 NOV RAM

BETRIEBSSPANNUNGS-ANZEIGE VOLTAGE INDICATOR

ST04 BU04 B02 FÜHLER/SENSOR UNTERTEMPERATUR/ LOW-TEMPERATURE

ST05 BU05 B01 FÜHLER/SENSOR KÜHLUNG/COOLING

ST01 BU01 P20-10 P20-09 P20-08 P20-07 P20-06 P20-05 P20-04 P20-03 P20-02 P20-01

ST02 BU02 BU02/6(ST17/1) BU02/5(ST17/2) BU02/4(ST17/3) BU02/3(ST17/4) BU02/2(ST17/5)

P04-3 P04-4 Low Temperature

P04-2 P04-1 Empty Indicator

BU4 Service Device BU1 Operating-Panel Display Reset Off On Key-Switch

ST20/5 ST20/12 ST20/6 ST20/4 Stop

ST17 ST17/1 ST17/2 ST17/3 ST17/4 ST17/5

ST20 P20-01 P20-02 P20-03 P20-04 P20-05 P20-06 P20-07 P20-08 P20-09 P20-10

115V AUSFÜHRUNG

BU12 F05 1AT 115V 25V~ 0 T02

SPANNUNGSWÄHLER VOLTAGE SELECTOR

F05 0.75AT 240V 220V 208V 25V~ 0 T02

ST07 BU07

Y03 EINLAUFVENTIL INLET VALVE ST03 BU03 SCHWIMMER-SCHALTER FLOAT SWITCH S11

Y01 WASSERSPULE WATER COIL ST09 BU09

D1040 E-PROM

FOTOTRANSISTOR PHOTOTRANSISTOR B03 ST08 BU08

FLEXISPULE FLEXI COIL Y02 B04 SENDER PHOTODIODE

ST10 BU10 ANSCHLUSS F. OPTIONEN CONNECTOR F. OPTIONS

25V~ 13V~ 0V~ +25V +20,5V STAB. +12 V +5 V STAB. GND CONTROL OR SIGNAL

4897	a	Spannungssymbole	24.07.01	RD		SAT				
ÄND.-NR.	IND.	BESCHREIBUNG DER ÄNDERUNG	DATUM	NAME	GEPR.	TYP	BAUGR.	LFD.NR.	STK.	

ERSETZT d.
ERSATZ f. 2-1181 D
TOLERANZEN

	DATUM	NAME
GEZ.	24.10.97	RD
GEPR.		
GEPR.		

DAGMA GmbH

D-PLAN

SCHALTPLAN VERDRAHTUNG
CFT100 TANK TOP USA/KANADA

MASSTAB

BLATT VON

ARTIKEL-NR. H - 3085

ZEICH-NUNGS-NR. 2 - 1315a

K.5 Technical Specifications

WHAT:	HOW:
Transformator T01	Primary voltage: national Secondary voltage: 13 V
Transformator T02	Primary voltage: national Secondary voltage: 25 V
Control / operating panel	Operating voltage: 12 V / 24 V / 5 V
Transformators T01 - Peltier T02 - control	 Secondary voltage: 13 V Secondary voltage: 25 V
Fuses - power supplies USA/Canada 115 V Fuse F04 at T01 Fuse F05 at T02 USA/Canada 208–240 V Fuse F04 at T01 Fuse F05 at T02 (in the voltage selector) Europe 220–240 V Fuse F04 at T01 Fuse F05 at T02 Japan 200 V Fuse F04 at T01 Fuse F05 at T02	 0.75 AT 1.0 AT 0.4 AT 0.75 AT 0.315 AT 0.5 AT 0.31 AT 0.5 AT

K.6 Options

Not available

K.7 Accessories

Not available